REACTOR CONTAINMENT BUILDING
INTEGRATED LEAK RATE TEST

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YANKEE ATOMIC ELECTRIC COMPANY
ROWE, MASSACHUSETTS 01346

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INTRODUCTION

During September, 1980, a periodic Reactor Containment Building Integrated Leak Rate Test (Type "A" Test) was conducted at Yankee-Rowe to demonstrate the leak tight integrity of the vapor container. The regulating documents for the test were Appendix J of 10 CFR 50 and ANSI N45.4-1972, per Yankee-Rowe Technical Specifications (TS 4.6.1.2). In addition, ANS N274 Draft 3- July 1979 was followed extensively to conform with current NRC guidelines. A routine unannounced NRC inspection was conducted during the Type "A" Test (Report No. 50-29/80-17). No unresolved items or items of non-compliance were identified by the inspector.

A minimum test pressure of 16 psig was maintained during the test. The vapor container air mass was calculated using the absolute method and data was analyzed using the mass point method.

Since the last Type "A" Test in June, 1977, Type "B" and "C" tests have been conducted at intervals no greater than 24 months (6 months for the vapor container personnel hatch). A running total of the Type "B" & "C" test leak rate results has been updated with each test to monitor continuous compliance with the Technical Specifications (TS 3.6.1.2.b). Testing was accomplished using the pressure decay method at a minimum test pressure of 32 psig.

A. TYPE "A" TEST

1. GENERAL DATA

(a) Owner: Yankee Atomic Electric Company
(b) Docket No: 50-29
(c) Location: Yankee Nuclear Power Station (Yankee-Rowe)
Star Route
Rowe, Massachusetts, 01367
(d) Containment Description: The vapor container is a steel sphere 125 feet in diameter, with a minimum thickness of 7/8 inch. The vapor container is completely above ground and is uninsulated.
(e) Date Test was Completed: September 24, 1980

2. TECHNICAL DATA:

(a) Containment net free volume: 860,000 ft^3
(b) Design Pressure: 34.5 psig
(c) Design Temperature: 249°F
(d) Calculated Accident Peak Pressure: 31.6 psig
(e) Calculated Accident Peak Temperature: 244°F

3. TEST DATA

(a) Test Method: Absolute
(b) Data Analysis Technique: Mass Point
(c) Test Pressure: 16 psig
(d) Maximum Allowable Leakage Rate, Lt: 0.1123%/24-hours
(e) Maximum Acceptable Measured Leakage Rate, Ltm: 0.07861%/24-hours
(f) Calculated Leakage Rate at 95% Upper Confidence Level: 0.0359308%/24-hours
(g) Type "C" Corrections for Systems in Operation During the Test Period: 0.0007117%/24-hours
(h) Corrections for Liquid Level Changes in the Containment Net Free Volume: 0.010539%/24-hours
(i) Calculated Leakage Rate at 95% UCL Plus Correction Factors: 0.0471895%/24-hours
(j) Measured Leakage Rate, Ltm: 0.0191308%/24-hours

4. VERIFICATION TEST

(a) Mass Step Change Metered Volume: 53.524% of Lt
(b) Mass Step Change Measured by Type "A" Test Instrumentation: 60.441% of Lt

5. ANALYSIS AND INTERPRETATION

(a) Description of the Type "A" Test: The Type "A" test was conducted during the extended turbine repair outage using procedure No. OP-4701, Revision 6. Prior to the test, the structural integrity of the containment vessel was verified by a visual inspection of the accessible interior and exterior surfaces of the vessel (TS 4.6.1.6). No abnormal degradation was noted during the inspection, which was completed at 1716 on September 21, 1980.

Three portable 1200 cfm air compressors were connected to the vapor container. The main coolant system was vented to the vapor container atmosphere. An extensive valve line-up was completed.

Pressurization of the vapor container commenced at 1045 on September 22, 1980. At 12[illegible] all containment isolation valves tripped closed, at 4.6 psig. The air charge was stopped and initial water collection data was taken on the pressurizer level, low pressure surge tank level, and the vapor container drain tank level. A post-isolation valve line-up was initiated to subject the vapor container penetrations to backside atmospheric pressure to the extent practicable. A vapor container entry was made to check for oil mist and overall vapor container atmosphere conditions. The inspection was completed satisfactorily, and the air charge was continued at 1345. During the air charge to the test pressure, the post-isolation valve line-up was completed.

Test pressure was reached and the air charge was stopped at 1915. The charging manifold was vented to atmosphere and the temperature stabilization period was begun. Using the temperature stabilization criteria of ANS N274 Draft 3-July 1979, temperature stabilization was verified as of the data taken at 0004 on September 23, 1980. The test period was commenced at 0025.

During the night it was noticed that the graphs of the vapor container dry air pressure and the vapor container air mass were showing considerable data scatter. Investigation resulted in the discovery that the Mensor Quartz Manometer was oscillating. The oscillation was stopped at 0650, and subsequent data points were normal.

The test period was continued until 0711 on September 24, 1980, approximately 24 hours following the ending of the Mensor oscillation. Preliminary computer data indications were that the leak rate was well within the acceptance criteria.

The pumpback verification test was commenced at 0741. The pumpback was completed at 0837, and subsequent data collection and reduction showed the Type "A" test instrumentation was quite sensitive and easily met the acceptance criteria. Data taking was continued until 1147 for unequivocal verification of the sensitivity of the instrumentation.

The vapor container was subsequently depressurized and final water collection data was taken on the pressurizer level, low pressure surge tank level, and the vapor container drain tank level. The post-test valve line-up was completed.

(b) Instrumentation: In 1978 EDCR 78-07, "Upgrade of Containment Type "A" Test Instrumentation", was completed. This upgrade involved a total revamping of all instrumentation used in the data collection and reduction for Yankee-Rowe's future Type "A" tests, and included adherence to the Instrumentation Selection Guide formula of ANS-N274 Draft.

Vapor container temperatures were measured with twenty ARI Industries, Inc., Aridet Resistance Temperature Detectors, Model R-14.3-3E100.

Vapor container pressure was measured with one Mensor Corporation Quartz Manometer, Model 10100-001.

Vapor container dew probe readings were measured with four Honeywell Dewprobe Sensors, Model SSP129b061.

Ambient temperature was measured with one ARI Industries, Inc., Aridet Resistance Temperature Detector, Model R-14.3-3E100.

Ambient pressure was measured with one Setra Systems Electronic Manometer, Model 350A.

Pumpback air flow was measured with one Singer, American Meter Division, American Aluminumcase Meter, Model AL-800.

Signals from the resistance temperature detectors, dewprobe sensors, and manometers were collected and filed by one Consolidated Controls Corporation Datalogger, Model 90MC1-19.

Instrumentation data from the datalogger was processed with one Digital Equipment Corporation computer, Model PDP 8/E.

(c) Instrumentation Calibration: Instrumentation used for the Type "A" test were individually calibrated or checked as applicable no more than six months prior to the start of the Type "A" test, using standards which are traceable to the National Bureau of Standards. The measured correction factors for each instrument were implemented in the computer program used to process the data.

(d) Data Processing: Tables 1 through 9 and Figures . through 9 show the results of the processed data of the Type "A" test. A program developed by the Macro Corporation was used to read the Consolidated Controls Corporation Datalogger file at five minute intervals and to store the data in the PDP 8/E computer. The data sets stored in the PDP 8/E computer were read in groups of three and processed using a second computer program (see Table 10). For each data set the readings were corrected for decimal point and adjusted by the individual measured correction factors.

The vapor container temperature readings were then weighted for the vapor container volume they represented, and a vapor container average temperature was calculated. The four dewprobe readings were then averaged.

Next, the following parameters were averaged for the three data sets: ambient temperature, ambient pressure, vapor container average temperature, vapor container total pressure, and the dewprobe readings.

The dewprobe readings were then converted to vapor container dew point temperatures using the following equation which was developed from a calibration chart obtained from Honeywell:

$$\text{Dew Point Temp.} = 42.8081 + 0.752944(A) - 0.0004115(A^2) - 0.00000722(A^3)$$

where A = Dewprobe reading - 108.393

The dew point temperature was then converted to partial water pressure using the following equation:

$$\text{Partial Water Press.} = 0.362625 + 0.0123915(B) + 0.00019115(B^2) + 0.00000157(B^3)$$

where B = Dew Point Temp. - 69.9998

An average vapor container air mass for the three data sets was then calculated using the ideal gas law.

As each vapor container air mass number was obtained a linear least squares fit was performed. From the linear least squares fit a leak rate and a 95% upper confidence level leak rate were calculated. The 95% upper confidence level leak rate was developed from formulas in ANS N274 Draft 3-July 1979. After the test period had been running for 24 hours the leak rates were also calculated for the previous 24 hours.

Upon completion of processing each group of three data sets the results were output on a hard copy computer terminal.

Due to the large amount of data taken during the test period, it was necessary to switch to a second data disk during the test period. This switch was anticipated and occurred following the output of the results at 1650 on September 23, 1980. When the next group of data sets was output, the time indicated was 1706. Thus, one minute of continuity was lost during the switching of the data disks. In addition, a minor computer problem occurred following the output of the results at 2051 on September 23, 1980. When the problem was corrected, the time indicated for the next set of data was 2111. Thus, a set of data had been misplaced, although it was still on file in the computer. Following the completion of the Type "A" test the program was re-run to retrieve the misplaced set of data. The five-minute time difference resulted in essentially an insignificant change in the results. For example, the 95% upper confidence level leak rate changed from 0.035126%/24-hours to 0.0359388%/24-hours. Since this change for the five-minute time difference was so small, no attempt was made to account for the one minute of lost continuity.

(e) Pumpback Verification Test. Acceptability is demonstrated if the instrumentation indicates the mass change to within 25% of the allowable 24-hour mass loss. The initial air mass at the start of the pumpback test was 137,016 lbm. The air flow integrator calculations showed that 82.357 lbm. of air were pumped in. The instrumentation indicated that the resulting air mass was 137,109 lbm., a difference of 93 lbm. Using the formula for mass change acceptability given in ANS N274 Draft 3-July 1979, the result is 14.1098%, well within the 25% acceptance criteria.

(f) Type "C" Corrections. There were four Type "C" corrections to the 95% upper confidence level leak rate for systems in operation. The corrections made were the most recent Type "C" test results for the systems involved, at the concurrence of the NRC inspector. The total correction was 0.0007117%/24-hours, and consisted of the following:

Service Water: 0.00031%/24-hours
VC Heating: 0.00031%/24-hours
Component Cooling Return: 0.000083%/24-hours
Valve Stem Leakoff: 0.0000037%/24-hours

(g) Liquid Level Change Corrections: Three levels which could affect the net free volume of the vapor container were monitored during the Type "A" test. These levels were the pressurizer level, the low pressure surge tank level, and the vapor container drain tank level. From the time of the initial vapor container isolation until the subsequent depressurization, the pressurizer level decreased one inch, the low pressure surge tank level increased nine inches, and the vapor container drain tank level increased 8.5 inches. Corrections to the 95%

upper confidence level leak rate due to the changes in pressurizer level and low pressure surge tank level amounted to 0.010539%/24-hours. The change in the vapor container drain tank level was not considered, as per ANS N274 Draft 3-July 1979.

(h) Potentially Excessive Leakage Paths. There were no potentially excessive leakage paths identified during the course of the Type "A" test.

B. SUMMARY OF TYPE "B" AND "C" TEST EVENTS

Type "B" and "C" leakage rates are monitored on a minimum two year basis for all but the vapor container personnel hatch which is on a six month basis. The results of the staggered tests are used to update the running total (see Figure 10) so that at any given time the combined leakage rate for all penetrations subject to Type "B" and "C" testing is available for comparison with Technical Specification and administrative limits.

The pressure decay, absolute method of leak testing has been employed during the interval between the Type "A" test in June, 1977, and the latest Type "A" test in September, 1980. The pressure decay method utilizes a pressurized volume upstream of the Type "B" or "C" containment boundary. The downstream side of the boundary is vented where possible. The test volume is pressurized to greater than accident pressure, and the pressure source is disconnected. The rate of pressure decay will then indicate the leakage rate via the ideal gas law. All leakage is assigned to the boundary unless zero leakage through the boundary can be established with a halide detector.

Type "C" tests caused the running total leakage rate to fail Technical Specification acceptance criteria on eight occasions during the interval. In addition, two Type "C" test periods exceeded the 24-month maximum allowed. All ten events were reported at their occurrence. Per Appendix J a separate report of these events will accompany this report. There were no events concerning Type "B" tests during the interval.

TABLE 1

VAPOR CONTAINER AIR MASS

	DATE	TIME	AIR MASS, lbm
Temperature Stabilization Period	22 Sept 80	2004	137126
		2019	137148
		2034	137152
		2049	137000
		2104	137136
		2119	137174
		2134	137215
		2149	137022
		2204	137184
		2219	137062
		2234	136944
		2249	137005
		2304	137029
		2319	137073
		2334	137063
		2349	137236
	23 Sept 80	0004	137334
		0019	137342
Test Period	23 Sept 80	0035	137159
		0050	137188
		0105	137021
		0120	137002
		0135	137040
		0150	136962
		0205	137222
		0220	137163
		0235	137136
		0250	137027
		0305	136987
		0320	137140
		0335	136960
		0350	137105
		0405	137012
		0420	137197
		0435	137053
		0450	137071
		0505	137090
		0520	136911
		0535	137009
		0550	136988
		0605	136994
		0620	136989
		0635	137034
		0650	137092
		0705	137016
		0720	137010
		0735	137007
		0750	137011

TABLE 1 (cont'd)

VAPOR CONTAINER AIR MASS

	DATE	TIME	AIR MASS, lbm
Test Period	23 Sept 80	0805	136991
		0820	136940
		0835	136951
		0850	136962
		0905	136968
		0920	136976
		0935	136985
		0950	136978
		1005	136970
		1020	136971
		1035	136971
		1050	136967
		1105	136982
		1120	137002
		1135	137031
		1150	137049
		1205	137063
		1220	137062
		1235	137062
		1250	137064
		1305	137069
		1320	137068
		1335	137069
		1350	137068
		1405	137065
		1420	137069
		1435	137069
		1450	137075
		1505	137075
		1520	137078
		1535	137078
		1550	137071
		1605	137055
		1620	137037
		1635	137022
		1650	137003
		1706	136999
		1721	136986
		1736	136977
		1751	136965
		1806	136960
		1821	136947
		1836	136948
		1851	136949
		1906	136943
		1921	136939
		1936	136938

TABLE 1 (cont'd)

VAPOR CONTAINER AIR MASS

	DATE	TIME	AIR MASS, lbm
Test Period	23 Sept 80	1951	136939
		2006	136939
		2021	136937
		2036	136936
		2051	136936
		2106	136948
		2121	136974
		2136	136983
		2151	136976
		2206	136972
		2221	136978
		2236	136986
		2251	136982
		2306	136983
		2321	136982
		2336	136980
		2351	136985
	24 Sept 80	0006	136989
		0021	136989
		0036	136984
		0051	136982
		0106	136983
		0121	136984
		0136	136993
		0151	136989
		0206	136991
		0221	136994
		0236	136989
		0251	136987
		0306	136994
		0321	146995
		0336	136987
		0351	136992
		0406	136991
		0421	137002
		0436	137003
		0451	136993
		0506	137000
		0521	137003
		0536	137000
		0551	137006
		0606	137006
		0621	137007
		0636	137003
		0651	137003
		0706	137004

TABLE 1 (cont'd)

VAPOR CONTAINER AIR MASS

	DATE	TIME	AIR MASS, lbm
Pumpback Verification Period	24 Sept 80	0732	137016
		0747	137014
		0802	137036
		0817	137055
		0832	137078
		0847	137100
		0902	137109
		0917	137115
		0932	137114
		0947	137114
		1002	137121
		1017	137123
		1032	137125
		1047	137126
		1102	137112
		1117	137122
		1132	137123
		1147	137124

TABLE 2

VAPOR CONTAINER AVERAGE TEMPERATURE

	DATE	TIME	TEMP., °F
Temperature Stabilization Period	22 Sept 80	2004	73.9411
		2019	73.5448
		2034	73.2218
		2049	72.9495
		2104	72.6944
		2119	72.4659
		2134	72.2493
		2149	72.0586
		2204	71.8632
		2219	71.6861
		2234	71.5128
		2249	71.3534
		2304	71.2118
		2319	71.056
		2334	70.9441
		2349	71.1904
	23 Sept 80	0004	71.494
		0019	71.6863
Test Period	23 Sept 80	0035	71.8667
		0050	72.0274
		0105	72.1671
		0120	72.2761
		0135	72.3596
		0150	72.4308
		0205	72.4933
		0220	72.564
		0235	72.6703
		0250	72.8004
		0305	72.969
		0320	73.1529
		0335	73.3559
		0350	73.5516
		0405	73.7445
		0420	73.9146
		0435	74.0757
		0450	74.1617
		0505	74.231
		0520	74.2744
		0535	74.2995
		0550	74.328
		0605	74.3589
		0620	74.3837
		0635	74.4092
		0650	74.4565
		0705	74.4997
		0720	74.5172
		0735	74.5067

TABLE 2 (cont'd)

VAPOR CONTAINER AVERAGE TEMPERATURE

	DATE	TIME	TEMP., °F
Test Period	23 Sept 80	0750	74.4923
		0805	74.4668
		0820	74.2033
		0835	73.9369
		0850	73.7792
		0905	73.6659
		0920	73.5817
		0935	73.4993
		0950	73.4321
		1005	73.3117
		1020	73.1803
		1035	73.0478
		1050	72.9368
		1105	72.8511
		1120	72.7859
		1135	72.7766
		1150	72.8076
		1205	72.8278
		1220	72.8407
		1235	72.828
		1250	72.8482
		1305	72.9604
		1320	73.1076
		1335	73.2422
		1350	73.3489
		1405	73.4341
		1420	73.4935
		1435	73.5697
		1450	73.6484
		1505	73.6956
		1520	73.7349
		1535	73.7623
		1550	73.7455
		1605	73.6959
		1620	73.6206
		1635	73.4978
		1650	73.3672
		1706	73.2616
		1721	73.168
		1736	73.07
		1751	72.963
		1806	72.8166
		1821	72.6626
		1836	72.4353
		1851	72.1751
		1906	71.9246
		1921	71.683
		1936	71.4325

TABLE 2 (cont'd)

VAPOR CONTAINER AVERAGE TEMPERATURE

	DATE	TIME	TEMP., °F
Test Period	23 Sept 80	1951	71.1544
		2006	70.9072
		2021	70.6595
		2036	70.4101
		2051	70.1783
		2106	69.9452
		2121	69.8323
		2136	69.7419
		2151	69.6465
		2206	69.55
		2221	69.434
		2236	69.3287
		2251	69.2414
		2306	69.1312
		2321	69.0014
		2336	68.881
		2351	68.761
	24 Sept 80	0006	68.6672
		0021	68.5691
		0036	68.4689
		0051	68.3851
		0106	68.2731
		0121	68.1742
		0136	68.0709
		0151	68.0171
		0206	67.9239
		0221	67.8334
		0236	67.7507
		0251	67.6691
		0306	67.5579
		0321	67.467
		0336	67.3695
		0351	67.268
		0406	67.1623
		0421	67.0639
		0436	66.9841
		0451	66.9423
		0506	66.8612
		0521	66.7965
		0536	66.7333
		0551	66.6402
		0606	6.5633
		0621	66.4923
		0636	66.4288
		0651	66.3548
		0706	66.3017

TABLE 2 (cont'd)

VAPOR CONTAINER AVERAGE TEMPERATURE

	DATE	TIME	TEMP., °F
Pumpback Verification Period	24 Sept 80	0732	66.1638
		0747	66.1111
		0802	66.0595
		0817	66.0105
		0832	65.9523
		0847	65.9757
		0902	66.0281
		0917	66.0562
		0932	66.0769
		0947	66.1434
		1002	66.2255
		1017	66.3158
		1032	66.4464
		1047	66.5511
		1102	66.6927
		1117	66.8306
		1132	67.0068
		1147	67.1915

TABLE 3

VAPOR CONTAINER DEW POINT TEMPERATURE

	DATE	TIME	TEMP., °F
Temperature Stabilization Period	22 Sept 80	2004	55.2768
		2019	54.3281
		2034	53.324
		2049	52.4484
		2104	51.635
		2119	51.064
		2134	50.6618
		2149	50.3296
		2204	49.9495
		2219	49.5698
		2234	49.3559
		2249	49.1128
		2304	48.8832
		2319	48.723
		2334	48.6901
		2349	49.3447
	23 Sept 80	0004	50.6228
		0019	51.8354
Test Period	23 Sept 80	0035	53.0266
		0050	54.0241
		0105	54.8312
		0120	55.6072
		0135	56.1231
		0150	56.5841
		0205	57.0499
		0220	57.2764
		0235	57.546
		0250	57.8207
		0305	58.0225
		0320	58.2677
		0335	58.5266
		0350	58.6059
		0405	58.7679
		0420	58.8676
		0435	58.9624
		0450	59.0686
		0505	59.0958
		0520	59.21[illegible]
		0535	59.1[illegible]6
		0550	59.2666
		0605	59.3727
		0620	59.3438
		0635	59.3432
		0650	59.4059
		0705	59.4506
		0720	59.497
		0735	59.6085

TABLE 3 (cont'd)

VAPOR CONTAINER DEW POINT TEMPERATURE

	DATE	TIME	TEMP., °F
Test Period	23 Sept 80	0750	59.5796
		0805	59.7229
		0820	59.6049
		0835	59.222
		0850	58.7516
		0905	58.3621
		0920	57.8643
		0935	57.3839
		0950	56.876
		1005	56.2955
		1020	55.7738
		1035	55.3911
		1050	55.1595
		1105	54.7352
		1120	54.4597
		1135	54.3551
		1150	54.1051
		1205	53.8163
		1220	53.6248
		1235	53.4462
		1250	53.2878
		1305	53.0832
		1320	52.9652
		1335	52.833
		1350	52.654
		1405	52.5192
		1420	52.3289
		1435	52.1793
		1450	52.0068
		1505	51.9045
		1520	51.7479
		1535	51.6153
		1550	51.5455
		1605	51.303
		1620	51.1894
		1635	50.9306
		1650	50.8039
		1706	50.564
		1721	50.5517
		1736	50.4935
		1751	50.2783
		1806	50.2337
		1821	50.1285
		1836	49.8517
		1851	49.7811
		1906	49.6554
		1921	49.4284
		1936	49.2877

TABLE 3 (cont'd)

VAPOR CONTAINER DEW POINT TEMPERATURE

	DATE	TIME	TEMP., °F
Test Period	23 Sept 80	1951	49.3255
		2006	49.0898
		2021	49.0513
		2036	48.9576
		2051	48.8925
		2106	48.728
		2121	48.7739
		2136	49.1822
		2151	49.6888
		2206	50.217
		2221	50.5022
		2236	50.6135
		2251	50.9257
		2306	51.0609
		2321	51.0239
		2336	51.2055
		2351	51.2438
	24 Sept 80	0006	51.1499
		0021	51.0715
		0036	51.1641
		0051	51.0375
		0106	51.0381
		0121	51.0128
		0136	50.925
		0151	50.8052
		0206	50.8299
		0221	50.6265
		0236	50.6036
		0251	50.535
		0306	50.35
		0321	50.2436
		0336	50.3247
		0351	50.1186
		0406	50.0053
		0421	49.7984
		0436	49.6764
		0451	49.7984
		0506	49.5995
		0521	49.4997
		0536	49.3888
		0551	49.2747
		0606	49.2381
		0621	49.186
		0636	49.1407
		0651	49.0681
		0706	49.0216

TABLE 3 (cont'd)

VAPOR CONTAINER DEW POINT TEMPERATURE

	DATE	TIME	TEMP., °F
Pumpback Verification Period	24 Sept 80	0732	48.7633
		0747	48.746
		0802	48.6628
		0817	48.5156
		0832	48.6435
		0847	48.7398
		0902	48.8515
		0917	49.0284
		0932	49.0557
		0947	49.1835
		1002	49.2957
		1017	49.5958
		1032	49.7563
		1047	49.887
		1102	50.3265
		1117	50.4008
		1132	50.4336
		1147	50.6185

TABLE 4

AMBIENT TEMPERATURE

	DATE	TIME	TEMP., °F
Temperature Stabilization Period	22 Sept 80	2004	67.71
		2019	67.1366
		2034	66.8833
		2049	66.41
		2104	66.24
		2119	66.0
		2134	65.8466
		2149	65.3733
		2204	65.2166
		2219	65.09
		2234	65.0033
		2249	64.68
		2304	64.4266
		2319	64.69
		2334	64.48
		2349	64.24
	23 Sept 80	0004	64.1933
		0019	64.4033
Test Period	23 Sept 80	0035	64.1733
		0050	64.2533
		0105	64.1033
		0120	64.1366
		0135	64.0833
		0150	64.1266
		0205	64.2966
		0220	65.43
		0235	67.3233
		0250	72.6133
		0305	74.9566
		0320	75.58
		0335	76.05
		0350	76.1966
		0405	75.8466
		0420	74.4033
		0435	70.74
		0450	71.58
		0505	70.49
		0520	69.63
		0535	69.0133
		0550	69.1233
		0605	69.9366
		0620	71.44
		0635	72.81
		0650	72.45
		0705	72.2066
		0720	71.8233
		0735	71.3733

TABLE 4 (cont'd)

AMBIENT TEMPERATURE

	DATE	TIME	TEMP., °F
Test Period	23 Sept 80	0750	71.0033
		0805	71.01
		0820	71.7666
		0835	71.7466
		0850	70.9833
		0905	70.5133
		0920	70.3066
		0935	69.6433
		0950	68.55
		1005	68.15
		1020	68.82
		1035	68.8566
		1050	68.48
		1105	68.5
		1120	70.0333
		1135	71.7566
		1150	70.0733
		1205	69.8266
		1220	69.2666
		1235	69.9233
		1250	72.0
		1305	72.3033
		1320	72.9566
		1335	72.1833
		1350	73.0833
		1405	73.9
		1420	73.9533
		1435	73.31
		1450	73.29
		1505	73.1566
		1520	72.9366
		1535	70.7066
		1550	69.2566
		1605	68.7767
		1620	67.1
		1635	66.1566
		1650	66.6066
		1706	66.6533
		1721	68.3766
		1736	66.6866
		1751	64.52
		1806	63.7933
		1821	62.11
		1836	59.5467
		1851	57.28
		1906	56.05
		1921	55.2833
		1936	54.0833

TABLE 4 (cont'd)

AMBIENT TEMPERATURE

	DATE	TIME	TEMP., °F
Test Period	23 Sept 80	1951	53.0667
		2006	52.19
		2021	51.6466
		2036	51.1333
		2051	50.44
		2106	50.3566
		2121	50.3767
		2136	50.36
		2151	50.1066
		2206	50.1567
		2221	49.8
		2236	49.4633
		2251	48.8366
		2306	48.6567
		2321	48.1066
		2336	48.2467
		2351	48.5
	24 Sept 80	0006	47.9966
		0021	47.9367
		0036	47.7167
		0051	47.5067
		0106	47.1966
		0121	47.01
		0136	46.5766
		0151	46.97
		0206	46.9566
		0221	46.8767
		0236	46.8433
		0251	46.1266
		0306	45.89
		0321	45.26
		0336	44.6967
		0351	44.55
		0406	44.2833
		0421	44.08
		0436	44.2767
		0451	43.85
		0506	43.5333
		0521	43.3266
		0536	42.99
		0551	42.6733
		0606	42.3967
		0621	42.32
		0636	42.4
		0651	42.3133
		0706	42.3467

TABLE 4 (cont'd)

AMBIENT TEMPERATURE

	DATE	TIME	TEMP., °F
Pumpback Verification Period	24 Sept 80	0732	42.9
		0747	43.4267
		0802	43.96
		0817	44.3767
		0832	46.2333
		0847	47.4267
		0902	47.6433
		0917	47.87
		0932	48.1033
		0947	49.2967
		1002	49.78
		1017	50.8833
		1032	51.4766
		1047	51.65
		1102	52.39
		1117	53.69
		1132	55.0166
		1147	55.9666

TABLE 5

VAPOR CONTAINER TOTAL PRESSURE

	DATE	TIME	PRESS., psia
Temperature Stabilization Period	22 Sept 80	2004	31.7405
		2019	31.7141
		2034	31.689
		2049	31.632
		2104	31.6422
		2119	31.6335
		2134	31.6271
		2149	31.5694
		2204	31.592
		2219	31.5517
		2234	31.5123
		2249	31.5159
		2304	31.511
		2319	31.511
		2334	31.5022
		2349	31.5602
	23 Sept 80	0004	31.6095
		0019	31.6308
Test Period	23 Sept 80	0035	31.6086
		0050	31.6317
		0105	31.6076
		0120	31.6158
		0135	31.6333
		0150	31.6236
		0205	31.691
		0220	31.6836
		0235	31.6858
		0250	31.6704
		0305	31.6733
		0320	31.7212
		0335	31.6938
		0350	31.7397
		0405	31.7307
		0420	31.7843
		0435	31.7617
		0450	31.7718
		0505	31.7803
		0520	31.7426
		0535	31.7667
		0550	31.7646
		0605	31.7689
		0620	31.7682
		0635	31.78
		0650	31.7971
		0705	31.7821
		0720	31.7828
		0735	31.7825
		0750	31.7817

TABLE 5 (cont'd)

VAPOR CONTAINER TOTAL PRESSURE

	DATE	TIME	PRESS.,psia
Test Period	23 Sept 80	0805	31.7775
		0820	31.7492
		0835	31.732
		0850	31.7213
		0905	31.713
		0920	31.7059
		0935	31.699
		0950	31.6884
		1005	31.6756
		1020	31.664
		1035	31.6531
		1050	31.6438
		1105	31.6381
		1120	31.6367
		1135	31.6428
		1150	31.6469
		1205	31.6482
		1220	31.6479
		1235	31.6461
		1250	31.6467
		1305	31.6525
		1320	31.6599
		1335	31.6671
		1350	31.6722
		1405	31.6756
		1420	31.6789
		1435	31.6825
		1450	31.6866
		1505	31.6894
		1520	31.6912
		1535	31.692
		1550	31.6882
		1605	31.6807
		1620	31.6712
		1635	31.6586
		1650	31.6454
		1706	31.6363
		1721	31.6276
		1736	31.6199
		1751	31.6099
		1806	31.5989
		1821	31.5869
		1836	31.5718
		1851	31.5556
		1906	31.5386
		1921	31.5223
		1936	31.5063

TABLE 5 (cont'd)

VAPOR CONTAINER TOTAL PRESSURE

	DATE	TIME	PRESS.,psia
Test Period	23 Sept 80	1951	31.4902
		2006	31.4745
		2021	31.4586
		2036	31.4435
		2051	31.4289
		2106	31.417
		2121	31.4171
		2136	31.4158
		2151	31.4127
		2206	31.4091
		2221	31.4056
		2236	31.402
		2251	31.3981
		2306	31.3927
		2321	31.385
		2336	31.3783
		2351	31.3724
	24 Sept 80	0006	31.3668
		0021	31.3609
		0036	31.355
		0051	31.3486
		0106	31.3422
		0121	31.3366
		0136	31.3314
		0151	31.3265
		0206	31.3214
		0221	31.3156
		0236	31.3097
		0251	31.3035
		0306	31.2975
		0321	31.2912
		0336	31.2848
		0351	31.278
		0406	31.2714
		0421	31.2662
		0436	31.2616
		0451	31.257
		0506	31.2527
		0521	31.2486
		0536	31.2442
		0551	31.2391
		0606	31.2345
		0621	31.2296
		0636	31.2248
		0651	31.2206
		0706	31.2156

TABLE 5 (cont'd)

VAPOR CONTAINER TOTAL PRESSURE

	DATE	TIME	PRESS.,psia
Pumpback Verification Period	24 Sept 80	0732	31.2101
		0747	31.2066
		0802	31.2075
		0817	31.2079
		0832	31.2107
		0847	31.2171
		0902	31.2232
		0917	31.2273
		0932	31.2293
		0947	31.2332
		1002	31.2406
		1017	31.2484
		1032	31.2576
		1047	31.265
		1102	31.273
		1117	31.2835
		1132	31.2952
		1147	31.3073

TABLE 6

VAPOR CONTAINER PARTIAL WATER PRESSURE

	DATE	TIME	PRESS.,psia
Temperature Stabilization Period	22 Sept 80	2004	0.217
		2019	0.209
		2034	0.202
		2049	0.196
		2104	0.19
		2119	0.186
		2134	0.183
		2149	0.181
		2204	0.178
		2219	0.176
		2234	0.174
		2249	0.173
		2304	0.171
		2319	0.17
		2334	0.17
		2349	0.174
	23 Sept 80	0004	0.183
		0019	0.191
Test Period	23 Sept 80	0035	0.2
		0050	0.207
		0105	0.213
		0120	0.219
		0135	0.223
		0150	0.227
		0205	0.231
		0220	0.233
		0235	0.235
		0250	0.237
		0305	0.239
		0320	0.241
		0335	0.243
		0350	0.244
		0405	0.245
		0420	0.246
		0435	0.247
		0450	0.248
		0505	0.248
		0520	0.249
		0535	0.249
		0550	0.25
		0605	0.251
		0620	0.25
		0635	0.25
		0650	0.251
		0705	0.251
		0720	0.252
		0735	0.253
		0750	0.252
		0805	0.254

TABLE 6 (cont'd)

VAPOR CONTAINER PARTIAL WATER PRESSURE

	DATE	TIME	PRESS.,psia
Test Period	23 Sept 80	0820	0.253
		0835	0.249
		0850	0.245
		0905	0.242
		0920	0.238
		0935	0.234
		0950	0.229
		1005	0.225
		1020	0.221
		1035	0.218
		1050	0.216
		1105	0.212
		1120	0.21
		1135	0.21
		1150	0.208
		1205	0.205
		1220	0.204
		1235	0.203
		1250	0.202
		1305	0.2
		1320	0.199
		1335	0.198
		1350	0.197
		1405	0.196
		1420	0.195
		1435	0.194
		1450	0.192
		1505	0.192
		1520	0.191
		1535	0.19
		1550	0.189
		1605	0.188
		1620	0.187
		1635	0.185
		1650	0.184
		1706	0.182
		1721	0.182
		1736	0.182
		1751	0.181
		1806	0.18
		1821	0.18
		1836	0.178
		1851	0.177
		1906	0.176
		1921	0.175
		1936	0.174
		1951	0.174

TABLE 6 (cont'd)

VAPOR CONTAINER PARTIAL WATER PRESSURE

	DATE	TIME	PRESS.,psia
Test Period	23 Sept 80	2006	0.173
		2021	0.172
		2036	0.172
		2015	0.171
		2106	0.17
		2121	0.171
		2136	0.173
		2151	0.177
		2206	0.18
		2221	0.182
		2236	0.183
		2251	0.185
		2306	0.186
		2321	0.186
		2336	0.187
		2351	0.187
	24 Sept 80	0006	0.186
		0021	0.186
		0036	0.187
		0051	0.186
		0106	0.186
		0121	0.186
		0136	0.185
		0151	0.184
		0206	0.184
		0221	0.183
		0236	0.183
		0251	0.182
		0306	0.181
		0321	0.18
		0336	0.181
		0351	0.179
		0406	0.179
		0421	0.177
		0436	0.177
		0451	0.177
		0506	0.176
		0521	0.175
		0536	0.175
		0551	0.174
		0606	0.174
		0621	0.173
		0636	0.173
		0651	0.173
		0706	0.172

TABLE 6 (cont'd)

VAPOR CONTAINER PARTIAL WATER PRESSURE

	DATE	TIME	PRESS.,psia
Pumpback Verification Period	24 Sept 80	0732	0.171
		0747	0.171
		0802	0.17
		0817	0.169
		0832	0.17
		0847	0.17
		0902	0.171
		0917	0.172
		0932	0.173
		0947	0.173
		1002	0.174
		1017	0.176
		1032	0.177
		1047	0.178
		1102	0.181
		1117	0.181
		1132	0.182
		1147	0.183

TABLE 7

VAPOR CONTAINER DRY AIR PRESSURE

	DATE	TIME	PRESS.,psia
Temperature Stabilization Period	22 Sept 80	2004	31.5235
		2019	31.5051
		2034	31.487
		2049	31.436
		2104	31.4522
		2119	31.4475
		2134	31.4441
		2149	31.3884
		2204	31.414
		2219	31.3757
		2234	31.3383
		2249	31.3429
		2304	31.34
		2319	31.341
		2334	31.3322
		2349	31.3862
	23 Sept 80	0004	31.4265
		0019	31.4398
Test Period	23 Sept 80	0035	31.4086
		0050	31.4247
		0105	31.3946
		0120	31.3968
		0135	31.4103
		0150	31.3966
		0205	31.46
		0220	31.4506
		0235	31.4508
		0250	31.4334
		0305	31.4343
		0320	31.4802
		0335	31.4508
		0350	31.4957
		0405	31.4857
		0420	31.5383
		0435	31.5147
		0450	31.5238
		0505	31.5323
		0520	31.4936
		0535	31.5177
		0550	31.5146
		0605	31.5179
		0620	31.5182
		0635	31.53
		0650	31.5461
		0705	31.5311
		0720	31.5308
		0735	31.5295
		0750	31.5297

TABLE 7 (cont'd)

VAPOR CONTAINER DRY AIR PRESSURE

	DATE	TIME	PRESS.,psia
Test Period	23 Sept 80	0805	31.5235
		0820	31.4962
		0835	31.483
		0850	31.4763
		0905	31.471
		0920	31.4679
		0935	31.465
		0950	31.4594
		1005	31.4506
		1020	31.443
		1035	31.4351
		1050	31.4278
		1105	31.4261
		1120	31.4267
		1135	31.4328
		1150	31.4389
		1205	31.4432
		1220	31.4439
		1235	31.4431
		1250	31.4447
		1305	31.4525
		1320	31.4609
		1335	31.4691
		1350	31.4751
		1405	31.4796
		1420	31.4839
		1435	31.4885
		1450	31.4946
		1505	31.4974
		1520	31.5002
		1535	31.502
		1550	31.4992
		1605	31.4927
		1620	31.4842
		1635	31.4736
		1650	31.4614
		1706	31.4543
		1721	31.4456
		1736	31.4379
		1751	31.4289
		1806	31.4189
		1821	31.4069
		1836	31.3938
		1851	31.3786
		1906	31.3626
		1921	31.3473
		1936	31.3323
		1951	31.3162

TABLE 7 (cont'd)

VAPOR CONTAINER DRY AIR PRESSURE

	DATE	TIME	PRESS.,psia
Test Period	23 Sept 80	2006	31.3015
		2021	31.2866
		2036	31.2715
		2051	31.2579
		2106	31.2469
		2121	31.2461
		2136	31.2428
		2151	31.2357
		2206	31.2291
		2221	31.2236
		2236	31.219
		2251	31.2131
		2306	31.2067
		2321	31.199
		2336	31.1913
		2351	31.1854
	24 Sept 80	0006	31.1808
		0021	31.1749
		0036	31.168
		0051	41.1626
		0106	31.1562
		0121	31.1506
		0136	31.1464
		0151	31.1425
		0206	31.1374
		0221	31.1326
		0236	31.1267
		0251	31.1215
		0306	31.1164
		0321	31.1112
		0336	31.1038
		0351	31.0989
		0406	31.0924
		0421	31.0891
		0436	31.0846
		0451	31.08
		0506	31.0767
		0521	31.0736
		0536	31.0692
		0551	31.0651
		0606	31.0605
		0621	31.0566
		0636	31.0518
		0651	31.0476
		0706	31.0446

TABLE 7 (cont'd)

VAPOR CONTAINER DRY AIR PRESSURE

	DATE	TIME	PRESS.,psia
Pumpback Verification Period	24 Sept 80	0732	31.0391
		0747	31.0356
		0802	31.0375
		0817	31.0389
		0832	31.0407
		0847	31.0471
		0902	31.0522
		0917	31.0553
		0932	31.0563
		0947	31.0602
		1002	31.0666
		1017	31.0724
		1032	31.0806
		1047	31.087
		1102	31.092
		1117	31.1025
		1132	31.1132
		1147	31.1243

TABLE 8

VAPOR CONTAINER GAUGE PRESSURE

	DATE	TIME	PRESS.,psig
Temperature Stabilization Period	22 Sept 80	2004	17.7035
		2019	17.6758
		2034	17.6481
		2049	17.5853
		2104	17.5928
		2119	17.5784
		2134	17.5681
		2149	17.5069
		2204	17.5282
		2219	17.4857
		2234	17.4454
		2249	17.4508
		2304	17.4463
		2319	17.4476
		2334	17.4414
		2349	17.5047
	23 Sept 80	0004	17.5563
		0019	17.5833
Test Period	23 Sept 80	0035	17.5632
		0050	17.5902
		0105	17.5657
		0120	17.5792
		0135	17.6024
		0150	17.5958
		0205	17.6671
		0220	17.665
		0235	17.6716
		0250	17.6619
		0305	17.6666
		0320	17.7153
		0335	17.6919
		0350	17.7378
		0405	17.7288
		0420	17.785
		0435	17.7615
		0450	17.7743
		0505	17.7824
		0520	17.7447
		0535	17.7679
		0550	17.7609
		0605	17.7661
		0620	17.7575
		0635	17.7601
		0650	17.7772
		0705	17.7605
		0720	17.7576
		0735	17.7551

TABLE 8 (cont'd)

VAPOR CONTAINER GAUGE PRESSURE

	DATE	TIME	PRESS.,psig
Test Period	23 Sept 80	0750	17.7547
		0805	17.7524
		0820	17.7231
		0835	17.7042
		0850	17.6931
		0905	17.6825
		0920	17.6728
		0935	17.6624
		0950	17.65
		1005	17.6381
		1020	17.6252
		1035	17.6117
		1050	17.5989
		1105	17.59 8
		1120	17.5909
		1135	17.5952
		1150	17.5963
		1205	17.5967
		1220	17.5928
		1235	17.5902
		1250	17.5886
		1305	17.593
		1320	17.6026
		1335	17.6098
		1350	17.6171
		1405	17.6201
		1420	17.6212
		1435	17.6222
		1450	17.6227
		1505	17.6242
		1520	17.6203
		1535	17.6163
		1550	17.6086
		1605	17.5984
		1620	17.5854
		1635	17.5679
		1650	17.5487
		1706	17.536
		1721	17.5238
		1736	17.5086
		1751	17.4929
		1806	17.4766
		1821	17.4603
		1836	17.4408
		1851	17.4228
		1906	17.4014
		1921	17.3834
		1936	17.3594

TABLE 8 (cont'd)

VAPOR CONTAINER GAUGE PRESSURE

	DATE	TIME	PRESS.,psig
Test Period	23 Sept 80	1951	17.3403
		2006	17.3197
		2021	17.2999
		2036	17.2804
		2051	17.2619
		2106	17.2468
		2121	17.2452
		2136	17.2448
		2151	17.2452
		2206	17.242
		2221	17.2368
		2236	17.2315
		2251	17.2284
		2306	17.2217
		2321	17.2122
		2336	17.2037
		2351	17.1983
	24 Sept 80	0006	17.1914
		0021	17.1851
		0036	17.1792
		0051	17.1719
		0106	17.1629
		0121	17.1577
		0136	17.1538
		0151	17.1458
		0206	17.1376
		0221	17.1319
		0236	17.1256
		0251	17.1193
		0306	17.1141
		0321	17.1088
		0336	17.1028
		0351	17.0951
		0406	17.0868
		0421	17.0802
		0436	17.0712
		0451	17.0601
		0506	17.054
		0521	17.0451
		0536	17.0376
		0551	17.0303
		0606	17.024
		0621	17.0191
		0636	17.013
		0651	17.003
		0706	16.996

TABLE 8 (cont'd)

VAPOR CONTAINER GAUGE PRESSURE

	DATE	TIME	PRESS.,psig
Pumpback	24 Sept 80	0732	16.9912
Verification		0747	16.9847
Period		0802	16.9842
		0817	16.9838
		0832	16.9809
		0847	16.9882
		0902	16.9933
		0917	16.9974
		0932	16.9976
		0947	17.0025
		1002	17.0107
		1017	17.0208
		1032	17.0256
		1047	17.0329
		1102	17.0432
		1117	17.055
		1132	17.0688
		1147	17.0845

TABLE 9

AMBIENT PRESSURE

	DATE	TIME	PRESS.,psia
Temperature Stabilization Period	22 Sept 80	2004	14.037
		2019	14.0383
		2034	14.041
		2049	14.0467
		2104	14.0493
		2119	14.055
		2134	14.059
		2149	14.0625
		2204	14.0638
		2219	14.066
		2234	14.0669
		2249	14.0651
		2304	14.0647
		2319	14.0634
		2334	14.0607
		2349	14.0555
	23 Sept 80	0004	14.0533
		0019	14.0476
Test Period	23 Sept 80	0035	14.0454
		0050	14.0414
		0105	14.0419
		0120	14.0366
		0135	14.0309
		0150	14.0278
		0205	14.0239
		0220	14.0186
		0235	14.0142
		0250	14.0085
		0305	14.0067
		0320	14.0058
		0335	14.0019
		0350	14.0019
		0405	14.0019
		0420	13.9993
		0435	14.0001
		0450	13.9975
		0505	13.9979
		0520	13.9979
		0535	13.9988
		0550	14.0036
		0605	14.0028
		0620	14.0107
		0635	14.0199
		0650	14.0199
		0705	14.0217
		0720	14.0252
		0735	14.0274

TABLE 9 (cont'd)

AMBIENT PRESSURE

	DATE	TIME	PRESS.,psia
Test Period	23 Sept 80	0750	14.0269
		0805	14.0252
		0820	14.026
		0835	14.0278
		0850	14.0282
		0905	14.0304
		0920	14.0331
		0935	14.0366
		0950	14.0383
		1005	14.0375
		1020	14.0388
		1035	14.0414
		1050	14.0449
		1105	14.0462
		1120	14.0458
		1135	14.0476
		1150	14.0506
		1205	14.0515
		1220	14.055
		1235	14.0559
		1250	14.0581
		1305	14.0594
		1320	14.0572
		1335	14.0572
		1350	14.055
		1405	14.0555
		1420	14.0577
		1435	14.0603
		1450	14.0638
		1505	14.0651
		1520	14.0709
		1535	14.0757
		1550	14.0796
		1605	14.0823
		1620	14.0858
		1635	14.0906
		1650	14.0968
		1706	14.1003
		1721	14.1038
		1736	14.1113
		1751	14.117
		1806	14.1222
		1821	14.1266
		1836	14.131
		1851	14.1328
		1906	14.1372
		1921	14.1389
		1936	14.1468

TABLE 9 (cont'd)

AMBIENT PRESSURE

	DATE	TIME	PRESS.,psia
Test Period	23 Sept 80	1951	14.1499
		2006	14.1547
		2021	14.1587
		2036	14.1631
		2051	14.167
		2106	14.1701
		2121	14.1719
		2136	14.171
		2151	14.1675
		2206	14.167
		2221	14.1688
		2236	14.170[illegible]
		2251	14.1697
		2306	14.171
		2321	14.1728
		2336	14.[illegible]745
		2351	14.1741
	24 Sept 80	0006	14.1754
		0021	14.1758
		0036	14.1758
		0051	14.1767
		0106	14.1793
		0121	14.1789
		0136	14.1776
		0151	14.1807
		0206	14.1837
		0221	14.1837
		0236	14.1842
		0251	14.1842
		0306	14.1833
		0321	14.1824
		0336	14.182
		0351	14.1829
		0406	14.1846
		0421	14.1859
		0436	14.1903
		0451	14.1969
		0506	14.1987
		0521	14.2035
		0536	14.2066
		0551	14.2088
		0606	14.2105
		0621	14.2105
		0636	14.2118
		0651	14.2176
		0706	14.2206

TABLE 9 (cont'd)

AMBIENT PRESSURE

	DATE	TIME	PRESS.,psia
Pumpback Verification Period	24 Sept 80	0732	14.2189
		0747	14.2219
		0802	14.2233
		0817	14.2241
		0832	14.2298
		0847	14.229
		0902	14.2298
		0917	14.2298
		0932	14.2316
		0947	14.2307
		1002	14.2298
		1017	14.2277
		1032	14.232
		1047	14.232
		1102	14.2298
		1117	14.2285
		1132	14.2263
		1147	14.2228

TABLE 10

COMPUTER PROGRAM USED FOR DATA PROCESSING

```
 TYPE TYPED.BA
1000 REM      THIS PROGRAM IS FOR USE IN THE TYPE "A" TEST A
1040 REM      COMPLETE DESCRIPTION IS AVAILABLE IN THE RE FILE.
1080 REM      DIMENSION VARIABLES
1120 DIM D(64),M1(240)
1160 F(LEN#1:"SYS:MASS"
1200 INPUT#1:R
1240 FOR I=1 TO R\INPUT#1:M1(I)\NEXT I\CLOSE #1
1280 R=R+1
1320 N=601+R*3
1360 IF N<800 THEN 1480
1400 N=N-197
1440 GO TO 1360
1480 Q$="--------"
1520 F1=0\V=1\REM                          CLOCK
1560 FOR I=1 TO F\NEXT I\ GO TO 1720
1600 F=F+1000*F1\F1=F1+1
1640 FOR I=1 TO 1000*F1\NEXT I
1680 REM      NOW READ HEADER AND SEE IF 3 SETS ARE READY
1720 FILEN#1:"RXA1:HEADER"
1760 INPUT#1:A\CLOSE#1
1800 IF A<N THEN 1600
1840 PRINT\PRINT\PRINT Q$;Q$;Q$;Q$;Q$;Q$;Q$;Q$;Q$;Q$
1880 IF F1>0 THEN 1960\F=F-10000
1920 REM      NOW READ IN THE DATA CONTAINED IN THE LAST THREE
1960 P4=0\P5=0\P6=0\X=-108.393\Z1=0
2000 FOR I=3 TO 1 STEP -1\B=N-I\C$="TH"&STR$(B)
2040 FILE#1:"RXA1:"&C$\FOR J=1 TO 5\INPUT#1:T(J)\NEXT J
2080 FOR K=1 TO 64
2120 IF K=16 THEN 2160\INPUT#1:D(K)
2160 NEXT K
2200 CLOSE#1
2240 REM      NOW CORRECT THE DECIMAL POINT ON THE INPUTS.
2320 FOR J=32 TO 64\D(J)=D(J)/100\NEXT J
2360 D(64)=D(64)/10
2400 REM      NOW PRINT OUT THE THREE SETS OF DATA.
2440 PRINT\PRINT C$,"R =";R,,;
2480 FOR J=1 TO 5\PRINT T(J);\NEXT J\PRINT
2520 PRINT D(23)/10;\FOR K=32 TO 64\PRINT D(K);\NEXT K\PRINT
2525 REM                        CORRECTION FACTORS
2526 REM      RTD'S
2530 FOR J=32 TO 61
2532 READ F4
2540 D(J)=D(J)+F4
2545 NEXT J
2550 REM      MENSOR
2555 D(64)=D(64)*1.00110-0.318
2675 REM            ARE THE RTD READINGS IN RANGE????
```

TABLE 10 (cont'd)

COMPUTER PROGRAM USED FOR DATA PROCESSING

```
2680 Z=0\E=0\Y=0\S=0\T=0\G=0\H=0\H1=0
2760 FOR J=32 TO 55
2800 READ F4
2840 IF J < 44 THEN 2960
2880 IF J >47 THEN 2960
2920 GO TO 3200
2960 IF D(J)<40 THEN 3040
3000 IF D(J)<150 THEN 3200
3040 PRINT\PRINT "RTD ";J;" READS OUT OF RANGE AT  ";D(J);
3080 PRINT "DEGREES F. IT HAS BEEN SUPRESSED FROM THE CALCULATION ";
3120 PRINT "AND THE WEIGHTING FACTORS HAVE BEEN ADJUSTED ACCORDINGLY."
3160 F4=0
3200 E=E+F4\Z=Z+D(J)*F4
3240 NEXT J\RESTORE
3280 REM     NOW CHECK AND AVERAGE THE DEW PROBES.
3320 FOR J=56 TO 61
3360 IF J=58 THEN 3680
3400 IF J=59 THEN 3680
3440 IF D(J)<65 GO TO 3520
3480 IF D(J)<153 GO TO 3640
3520 PRINT\PRINT "DEW PROBE ";J; " READS OUT OF RANGE AT "; D(J);
3560 PRINT " DEGREES F IT HAS BEEN SUPRESSED FROM THE CALCULATION."
3600 D(J)=0\ GO TO 3680
3640 G=G+1
3680 NEXT J
3720 D1=(D(56)+D(57)+D(60)+D(61))/G
3760 X=X+D1/3
3800 P6=P6+D(59)/3
3840 P4=P4+D(64)/3
3880 P5=P5+D(23)/30
3920 REM     NOW CALCULATE THE AVERAGE CONTAINMENT TEMPERATURE
3960 E=E+F4\Z=Z+D(J)*F4
4000 Z=Z/E
4040 Z1=Z1+Z/3
4080 NEXT I
4120 REM     NOW CONVERT THE DEW PROBE CAVITY TEMPERATURES TO DEW
4160 REM     POINT TEMPERATURES,AVERAGE THE FOUR AND CALCULATE
4200 REM     THE PARTIAL WATER PRESSURE
4480 T=42.3081+.752944*X-.0004115*X**2-.00000722*X**3
4520 X=T-69.9998
4560 Y=.362625+.0123915*X+.0019115*X**2+.00000157*X**3
4600 Y=INT(Y*1000+.5)/1000
4640 REM     NOW CALCULATE THE AIR PRESSURE, VC PRESSURE,
4680 REM     DRY VC PRESSURE,AND THE AIR MASS.
4760 P1=13.9247+.0131766*(P5-260.441)
4800 P2=(P4*.4912)-P1
4840 P3=(P4*.4912)-Y
4880 M1(R)=P3*860000*144/(53.35*(459.69+Z1))
```

TABLE 10 (cont'd)

COMPUTER PROGRAM USED FOR DATA PROCESSING

```
5120 REM     NOW CALCULATE THE LEAK RATE FOR THE ENTIRE TEST
5160 D2=R\IF R<3 THEN 6280
5200 S1=0\S2=0\A3=0\A4=0\A5=0\A6=0\A7=0\A8=0\S0=0
5240 FOR I=V TO D2
5280 S0=S0+1
5320 S1=S1+M1(I)
5360 S2=S2+.25*S0
5400 NEXT I
5440 S0=0
5480 A1=S1/R
5520 A2=S2/R
5560 FOR I=V TO D2
5600 S0=S0+1
5640 A3=A3+((S0*.25-A2)*(M1(I)-A1))
5680 A4=A4+((S0*.25-A2)**2)
5720 A5=A5+(M1(I)-A1)
5760 A6=A6+((S0*.25)**2)
5800 A7=A7+((M1(I)-A1)*S0*.25)
5840 A8=A8+((M1(I)-A1)**2)
5880 NEXT I
5920 A=A3/A4
5960 B=(((A5*A6)-(A7*S2))/(R*A6-S2**2))+A1
6040 S3=((1/(R-2))*((R*A8-A5**2)/(R*A6-S2**2)-A**2))**.5
6080 L1=(-2400)*A/B
6120 D3=R-2
6160 T9=(1.6449*D3+3.5283+(.85602/D3))/(D3+1.2209-(1.5163/D3))
6200 U=L1+2400*T9*(S3/B)
6240 IF V1=1 THEN 7320
6280 PRINT\PRINT\PRINT\PRINT,,"**********"\PRINT
6320 PRINT "THE THIRD READING FOR THIS OUTPUT WAS TAKEN AT ";
6330 PRINT T(1)*100+T(2)
6650 PRINT "THE TEST HAS BEEN RUNNING FOR";R*.25;"HOURS."
6720 PRINT\PRINT "THE AVERAGE READINGS FOR THE LAST 15 MINUTES ";
6760 PRINT "WERE............."
6800 PRINT\PRINT TAB(5),"OUTSIDE TEMPERATURE....."F6;" DEGREES F."
6840 PRINT\PRINT TAB(5),"OUTSIDE PRESSURE........";P1;" PSI."
6880 PRINT\PRINT TAB(5),"VC AVERAGE TEMPERATURE..";Z1;" DEGREES F."
6920 PRINT\PRINT TAB(5),"VC DEW POINT............";T;" DEGREES F."
6960 PRINT\PRINT,"VC GAUGE PRESSURE.......";P2;" PSI."
7000 PRINT\PRINT TAB(5),"PARTIAL WATER PRESSURE..";Y;" PSI."
7040 PRINT\PRINT TAB(5),"VC DRY AIR PRESSURE.....";P3;" PSI."
7080 PRINT\PRINT,"VC AIR MASS.............";M1(R);" LBM."
7120 PRINT\PRINT "LEAK RATE OVER THE ENTIRE TEST IS..";
7125 PRINT L1;" PERCENT/24 HRS."
7200 PRINT\PRINT "THE UCL LEAK RATE ..................";
7220 PRINT U;" PERCENT/24 HRS."
7280 IF R<97 THEN 7620
7300 V1=1\V=R-95\R=96\GO TO 5200
```

TABLE 10 (cont'd)

COMPUTER PROGRAM USED FOR DATA PROCESSING

```
7320 PRINT\PRINT "THE LEAK RATE OVER THE LAST 24 HOURS";
7360 PRINT " IS........";L1," PERCENT/24 HRS."
7400 PRINT\PRINT "THE UCL LEAK RATE FOR THE LAST 24 HOURS";
7440 PRINT " IS.....";U," PERCENT/24 HRS."
7480 R=J2\V1=0\GO TO 7640
7620 FOR I=1 TO 6\PRINT\NEXT I
7640 N=N+3
7650 FILEVN#1:"SYS:MASS"
7655 M1(0)=R\FOR J=0 TO R
7660 PRINT#1:M1(J)\NEXT J\CLOSE#1
7680 R=R+1
7720 PRINT\PRINT Q$;Q$;Q$;Q$;Q$;Q$;Q$;Q$;Q$
7740 FOR I=1 TO 8\PRINT\NEXT I
7760 IF N<800 THEN 1520
7800 FOR I=1 TO 10\FOR J=1 TO 10\PRINT PNT(7)\NEXT J
7840 PRINT "CHANGE THE DISK NOW!!!!!!!!"\NEXT I
7880 N=604
7920 GO TO 1560
7930 DATA 1.10,1.93,1.54,1.89,1.31,1.65,1.69,1.57
7935 DATA 0.96,1.44,1.16,1.90,1.00,0.61,1.21,0.04
7940 DATA 0.96,1.61,0.69,1.85,1.33,1.02,1.15,1.15
7945 DATA 1.02,1.43,1.09,1.99,1.23,1.21
7960 DATA 2,8,4,2,2,2,2,8,8,8,8,6,0,0,0,0,6,6,6,2,8,8,2,2
8000 END
```

FIGURE 1

VAPOR CONTAINER AIR MASS

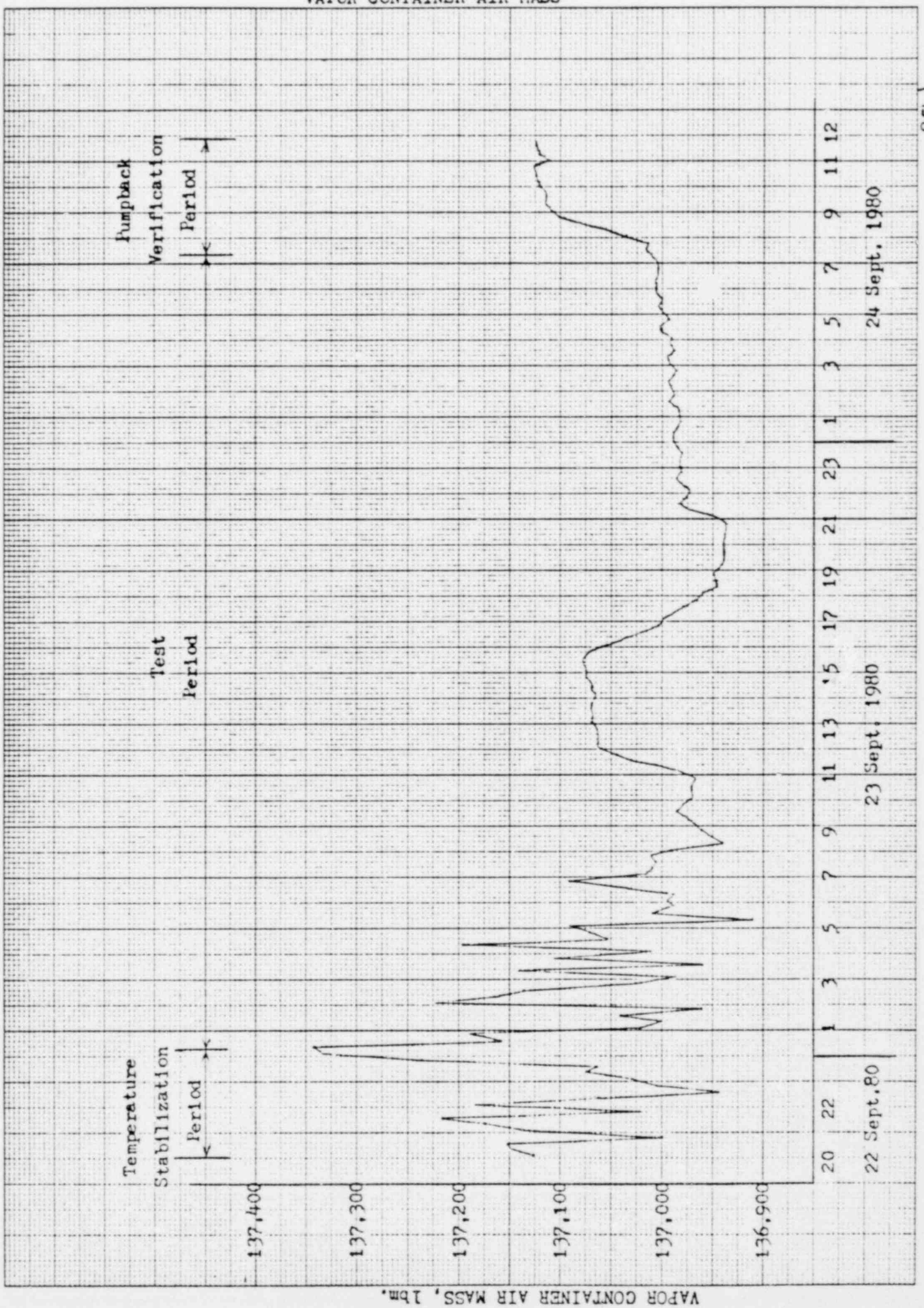
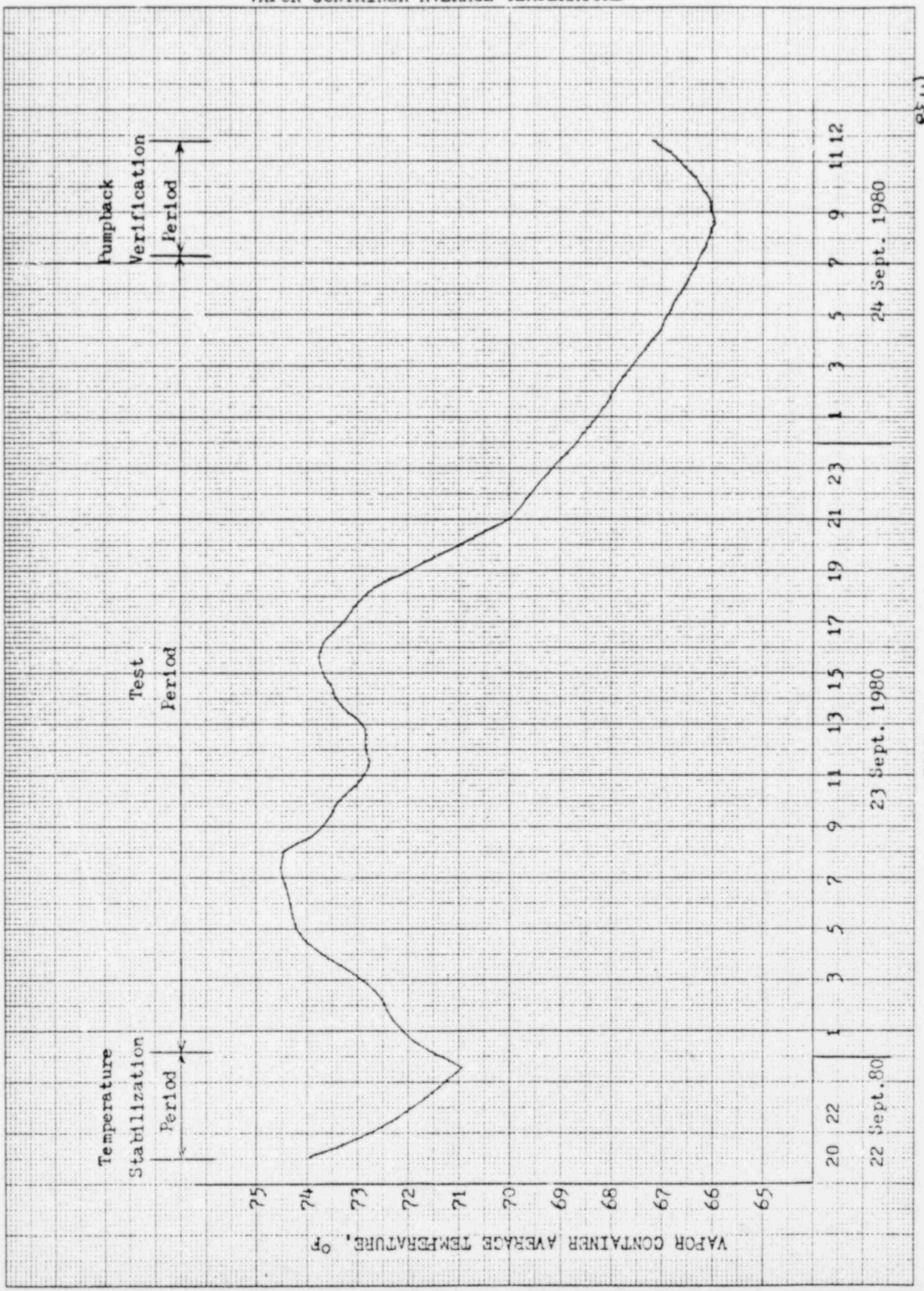


FIGURE 2

VAPOR CONTAINER AVERAGE TEMPERATURE



RSW 12/19/80

FIGURE 5

VAPOR CONTAINER DEWPOINT TEMPERATURE

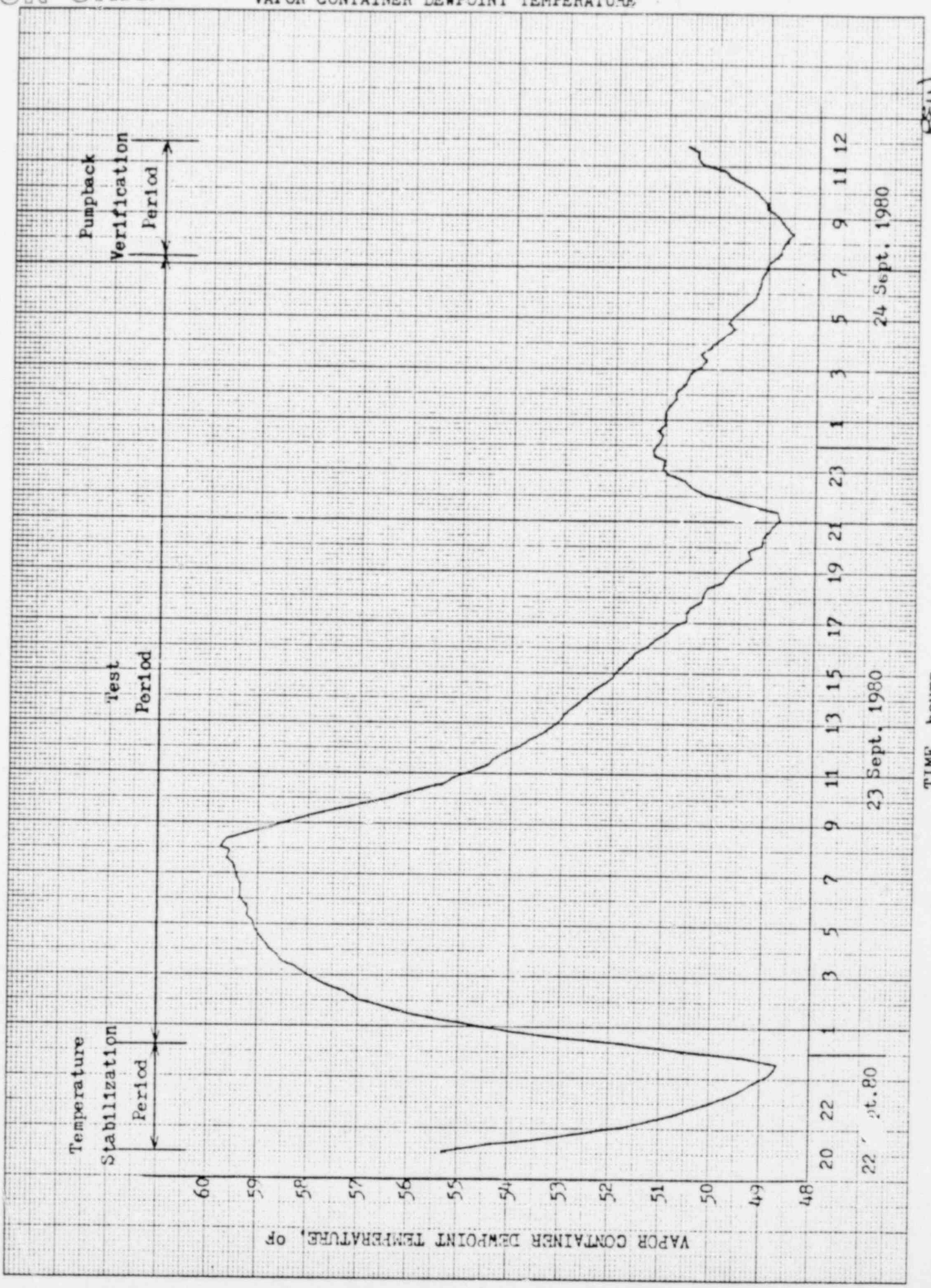


FIGURE 4

AMBIENT TEMPERATURE

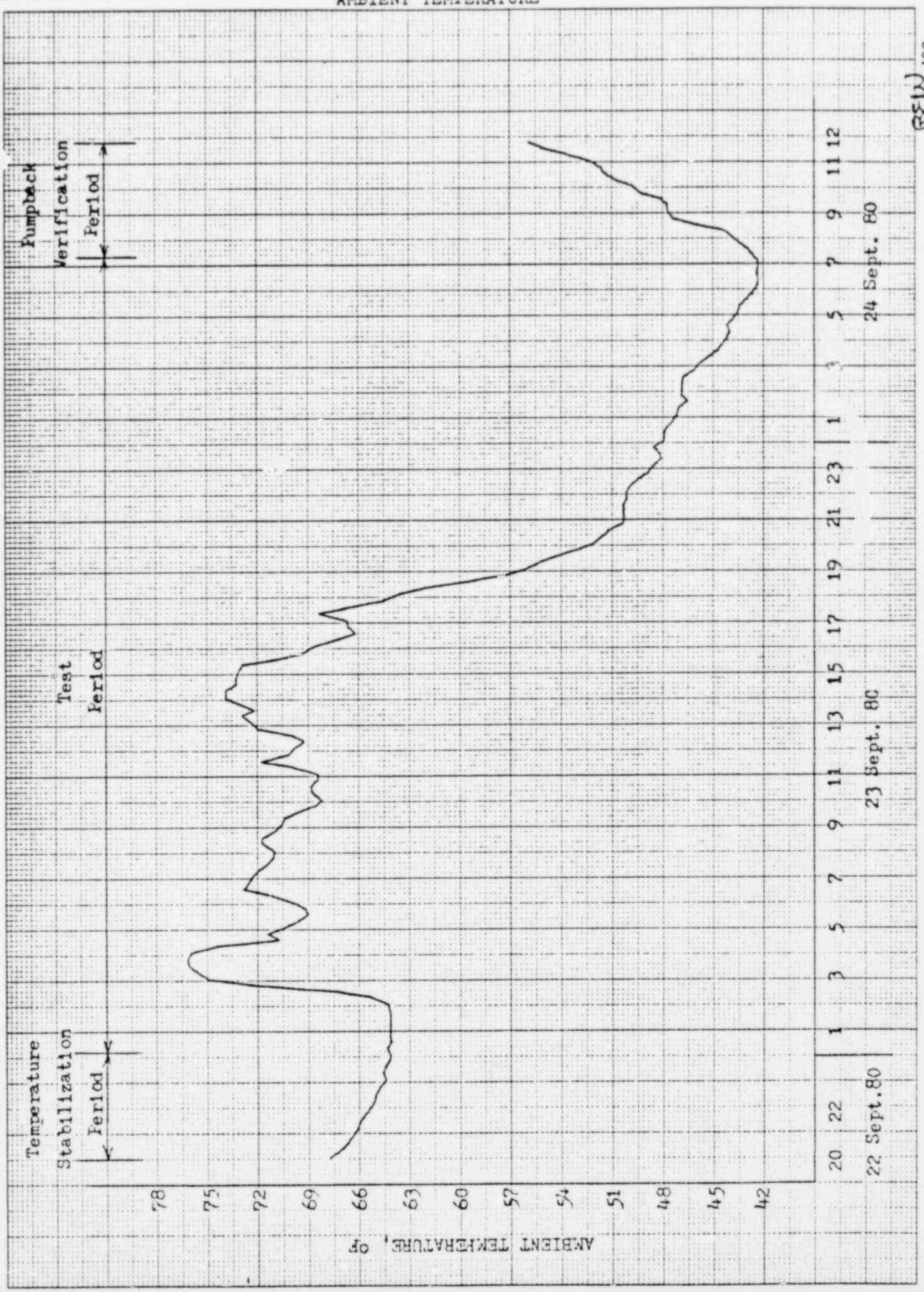
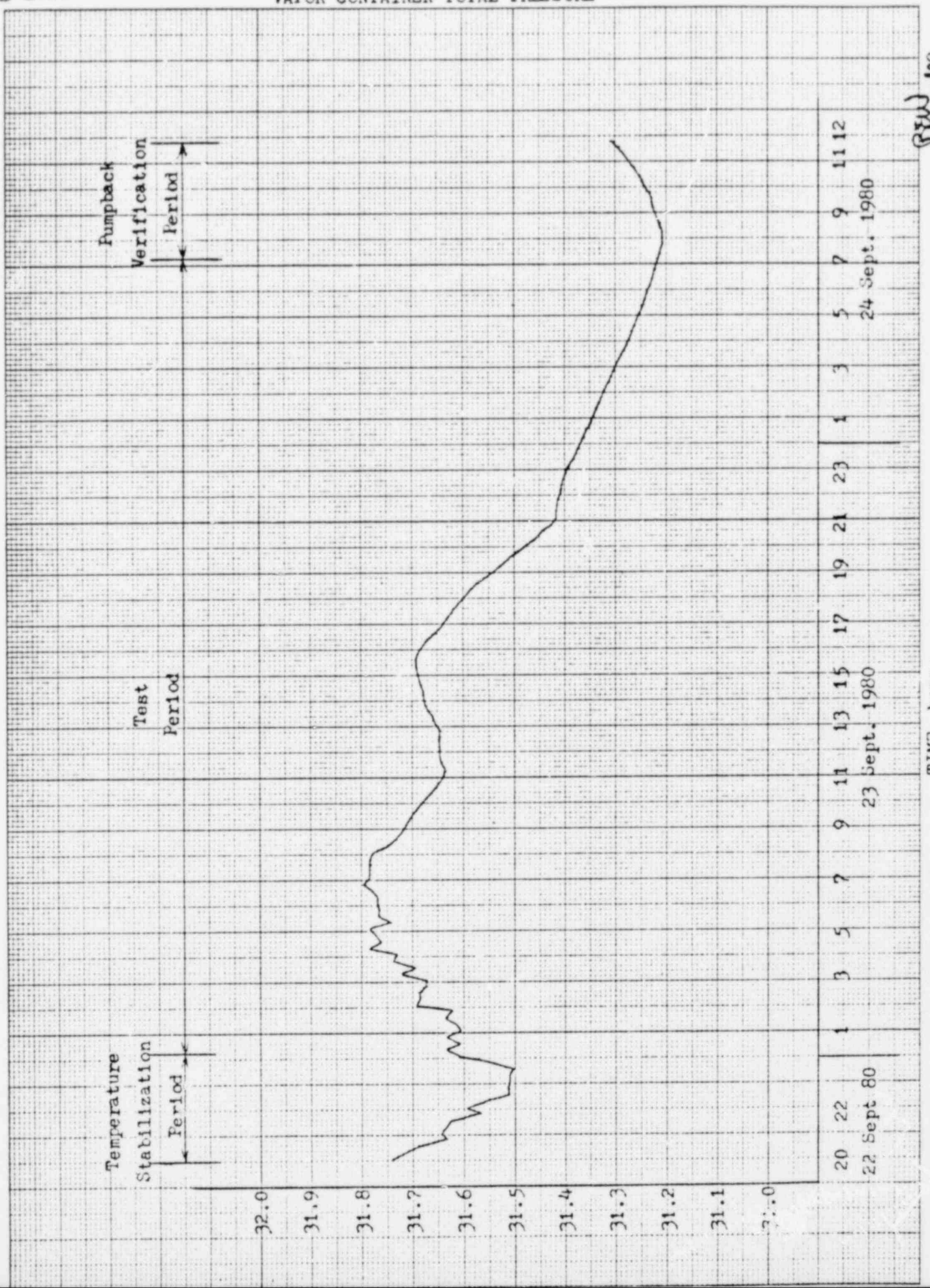


FIGURE 5

VAPOR CONTAINER TOTAL PRESSURE



RWJ 12/30/80

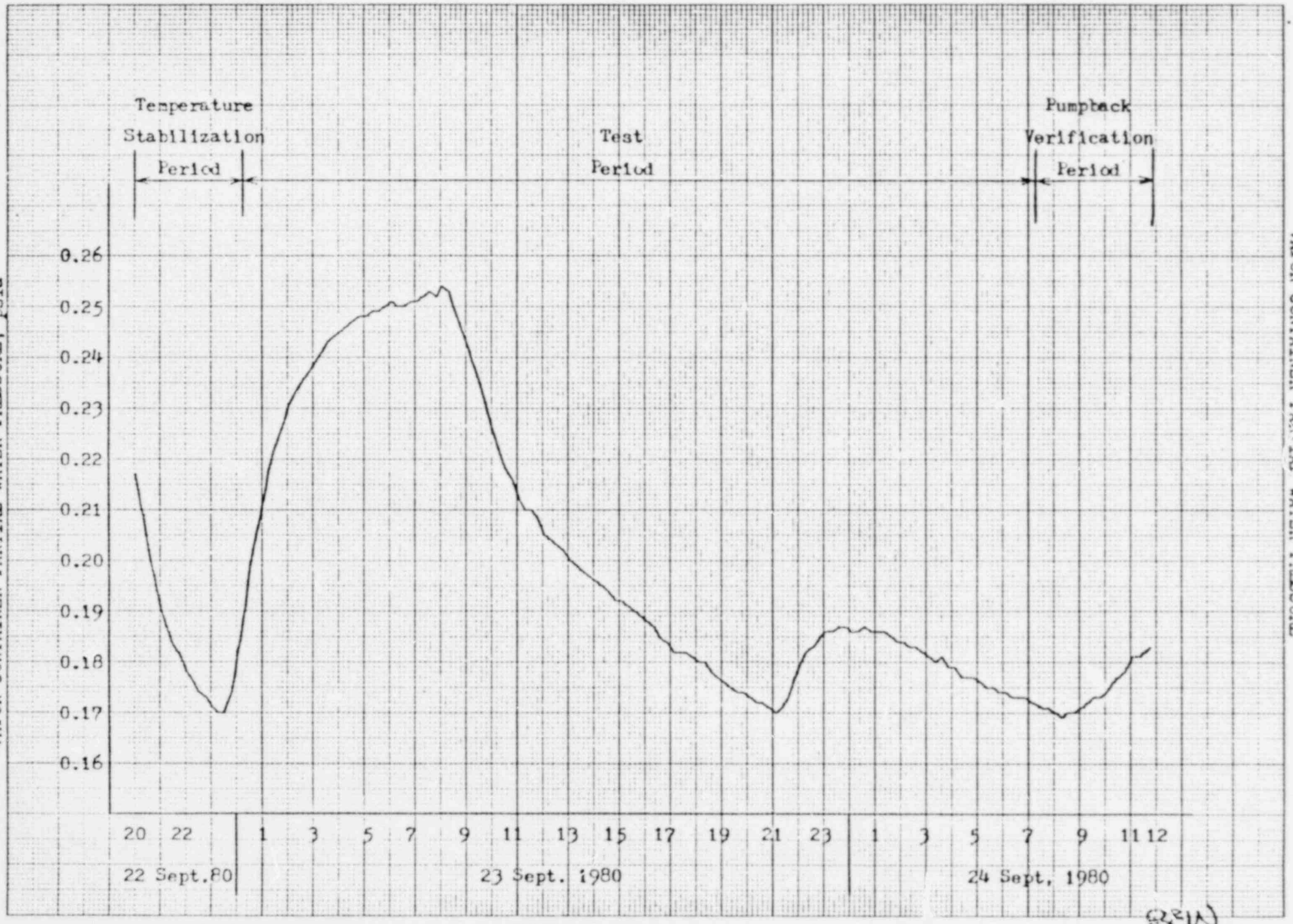
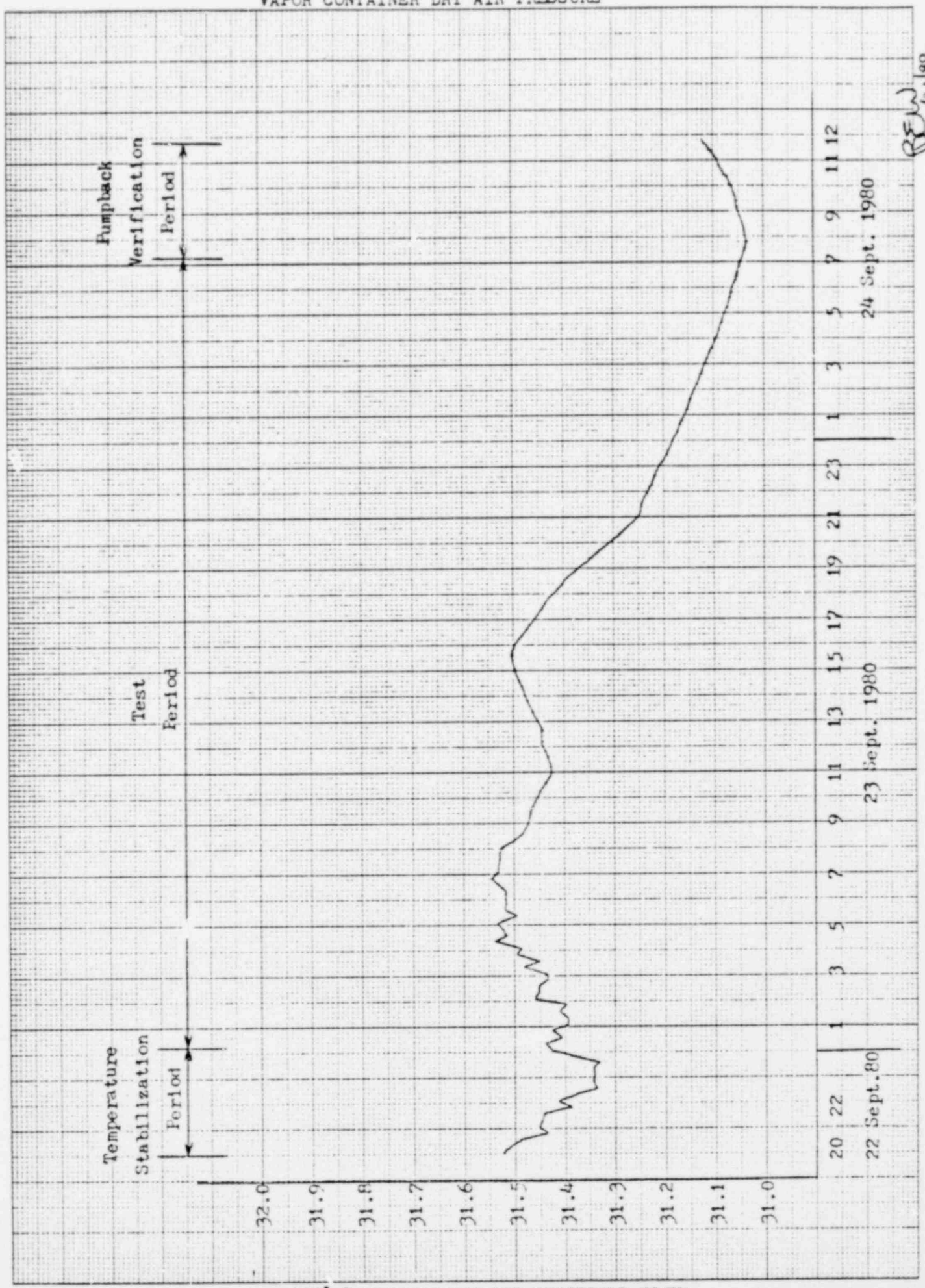


FIGURE 6
VAPOR CONTAINER PARTIAL WATER PRESSURE

BEW 12/21/80

FIGURE 7

VAPOR CONTAINER DRY AIR PRESSURE



RFW 12/21/80

FIGURE 8

VAPOR CONTAINER GAUGE PRESSURE

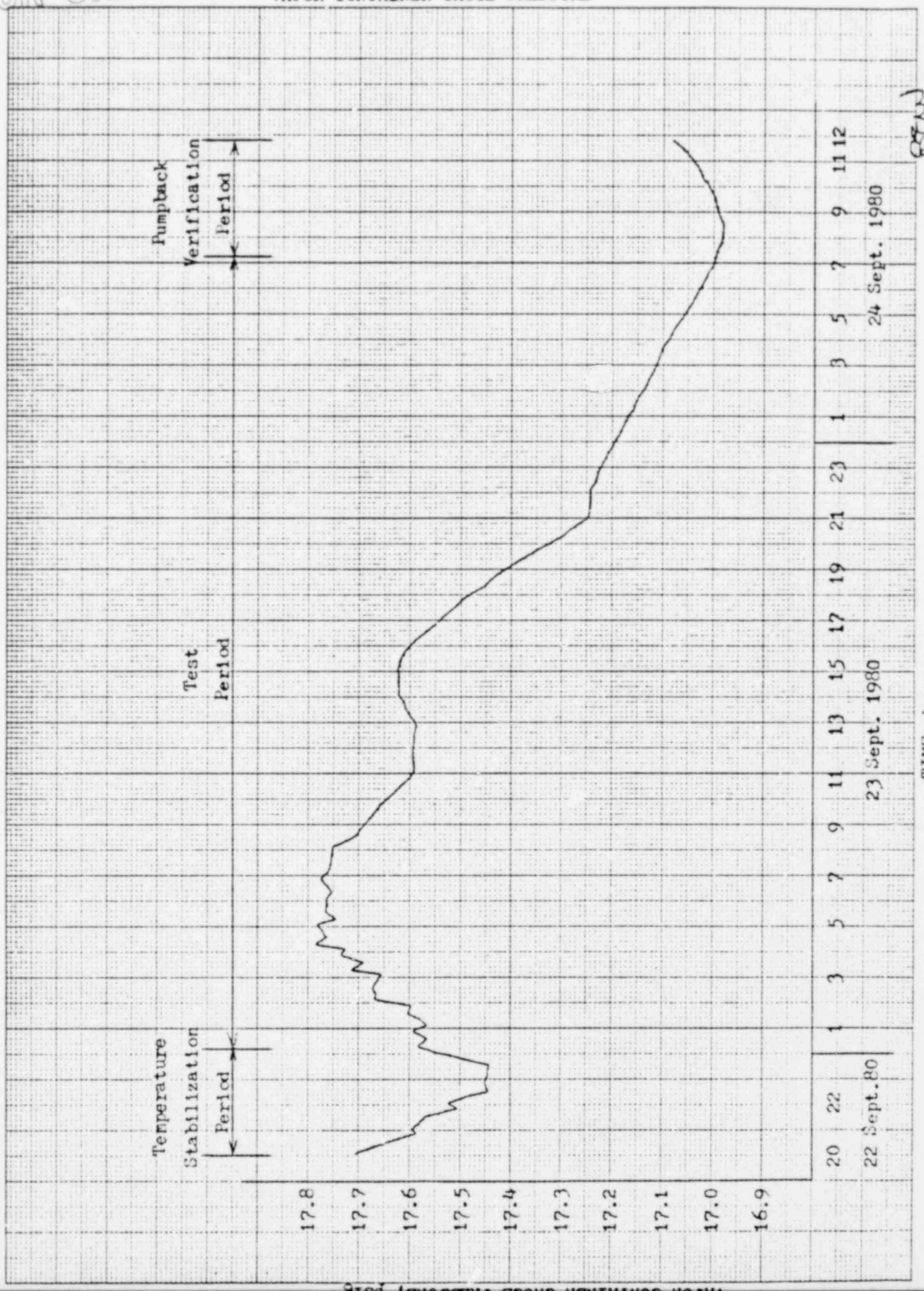
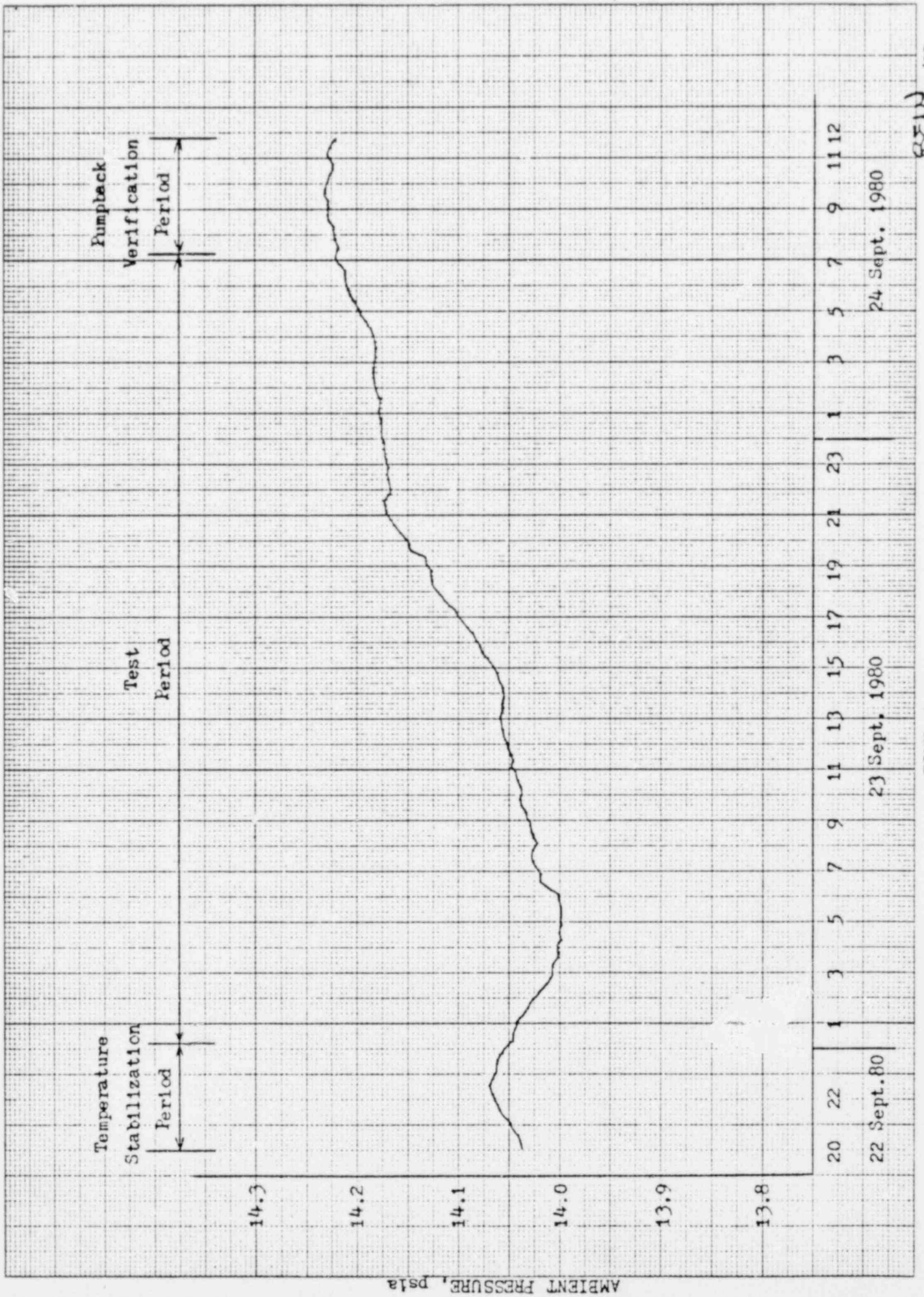


FIGURE 9

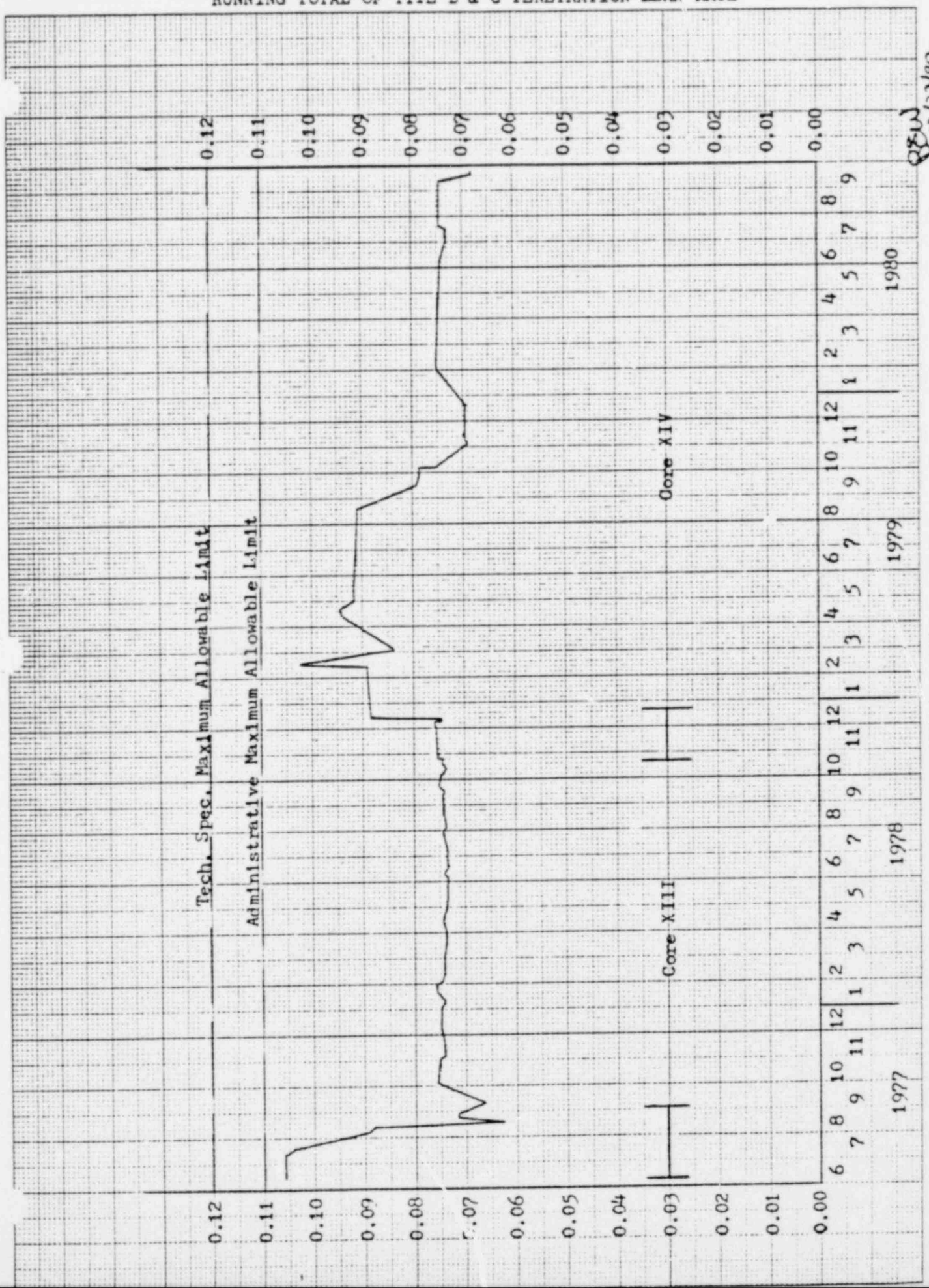
AMBIENT PRESSURE



RSEU 12/22/80

FIGURE 10

RUNNING TOTAL OF TYPE B & C PENETRATION LEAK RATE



SEPARATE ACCOMPANYING SUMMARY REPORT OF TYPE "B" AND "C" EVENTS SINCE THE JUNE 1977 TYPE "A" TEST

SEPTEMBER 1980

YANKEE ATOMIC ELECTRIC COMPANY
ROWE, MASSACHUSETTS 01346

Prepared By: Bruce E. Warner

Reviewed By: Timothy K Anderson
Plant Reactor Engineer

Approved By: Normand W St Laurent for H.A. Autio
Plant Superintendent

In the interval between the June 1977 Type "A" test and the September 1980 Type "A" test, all Type "B" and "C" vapor container penetration barriers subject to testing under Appendix J to 10 CFR 50 were tested at accident pressure on a two year basis (vapor container personnel hatch on a six month basis).

During that time, eight Type "C" failures occurred. In addition, two Type "C" test periods exceeded the 24-month maximum allowed. All ten events were reported at the time and are summarized in Table 1. Copies of the Licensee Event Reports are also attached. There were no events concerning Type "B" tests during the interval.

TABLE 1

TYPE "C" TEST EVENTS, JUNE 1977 to SEPTEMBER 1980

LER #	SYSTEM	BARRIER	DISPOSITION
77-44	VC Pressure Sensing/Service Water	TV-211/TV-408	TV-211: Underwent seat and disc machining TV-408: Diaphragm replaced
78-010	Post Accident Hydrogen Vent	HV-SOV-1	Cleaned internals; replaced rubber seal
78-034	Neutron Shield Tank Sample	TV-207	Cycled under pressure
79-05	Service Water	TV-408	Valve seat cleaned
79-14	Post Accident Hydrogen Vent	CA-V-688	Cleaned internals
79-27	Post Accident Hydrogen Vent	HV-SOV-1 & 2	Cleaned internals
79-29	Post Accident Hydrogen Vent	HV-SOV-1 & 2	Cleaned internals
80-13	Steam Generator Blowdown	TV-401D	Foreign material removed
78-09	Post Accident Hydrogen Vent	HV-SOV-1 & 2	Missed surveillance performed
79-20	Main Coolant Drain	VD-TV-202	Missed surveillance performed

YANKEE ATOMIC ELECTRIC COMPANY

Rowe, Massachusetts 01367

September 16, 1977

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Reportable Occurrence 50-29/77-44/03L
Failure of Vapor Container Isolation
Trip Valves TV-211 and TV-408 to Seat

Dear Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.b, the attached Licensee Event Report is hereby submitted.

Very truly yours,

Maynard N St Laurent
for H.A. Autio

Herbert A. Autio
Plant Superintendent

ELM/mid

Enclosures:

cc: [30] Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

[3] Director, Office of Management Information & Program Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

LER 77-44/03L

LICENSEE EVENT REPORT

CONTROL BLOCK [ ] (1–8) (PLEASE PRINT ALL REQUIRED INFORMATION)

	LICENSEE NAME		LICENSE NUMBER		LICENSE TYPE	EVENT TYPE
0 1	M A Y K R 1		0 0 – 0 0 0 0 0 – 0 0		4 1 1 1 1	0 3
7 8 9	14		15	25	26 30	31 32

	CATEGORY	REPORT TYPE	REPORT SOURCE	DOCKET NUMBER	EVENT DATE	REPORT DATE
0 1 CON'T		L	L	0 5 0 – 0 0 2 9	0 8 1 7 7 7	0 9 1 6 7 7
7 8	57 58	59	60	61 68	69 74	75 80

EVENT DESCRIPTION

0 2 During Class C testing of valves TV-211 and TV-408 it was observed that the valves'
0 3 leakage were greater than the acceptable limits. These are the only trip valves
0 4 associated with their respective piping. Both the valves had worn gaskets replaced
0 5 on 11/29/75. Seat and disc machining (TV-211) and diaphragm replacement (TV-408) were
0 6 proposed to reduce the leakage. (LER 77-44/03L)

	SYSTEM CODE	CAUSE CODE	COMPONENT CODE	PRIME COMPONENT SUPPLIER	COMPONENT MANUFACTURER	VIOLATION
0 7	S D	E	V A L V E X	L	M 1 2 0	N
7 8 9	10	11	12 17	43	44 47	48

CAUSE DESCRIPTION

0 8 Two Masoneilan Trip valves Model 138-RBS-11 (TV-211) and Model 138R-16 (TV-408)
0 9 exceeded their allowable leak rate because of worn seat and disc and a deteriorated
1 0 diaphragm respectively. After TV-211 underwent seat and (Cont'd in Additional Factors)

	FACILITY STATUS	% POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION
1 1	G	0 0 0	N/A	B	N/A
7 8	9	10 12	13 44	45	46 80

	FORM OF ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY	LOCATION OF RELEASE
1 2	Z	Z	N/A	N/A
7 8	9	10	11 44	45 80

PERSONNEL EXPOSURES

	NUMBER	TYPE	DESCRIPTION
1 3	0 0 0	Z	N/A
7 8 9	11	12	13 80

PERSONNEL INJURIES

	NUMBER	DESCRIPTION
1 4	0 0 0	N/A
7 8 9	11	12 60

OFFSITE CONSEQUENCES

1 5 N/A
7 8 9 80

LOSS OR DAMAGE TO FACILITY

	TYPE	DESCRIPTION
1 6	Z	N/A
7 8 9	10	80

PUBLICITY

1 7 N/A
7 8 9 80

ADDITIONAL FACTORS

1 8 (Cont. Cause Description) disc machining and the diaphragm of TV-408 was replaced
1 9 both valves were satisfactorily retested.
7 8 9 80

NAME Edwin L. May PHONE (413) 625-6140

YANKEE ATOMIC ELECTRIC COMPANY

Rowe, Massachusetts 01367

April 13, 1978

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Reportable Occurrence 50-29/78-010
Hydrogen Control System Sticking
Solenoid Valve

Dear Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.b, the attached Licensee Event Report is hereby submitted.

Very truly yours,

Herbert A. Autio

Herbert A. Autio
Plant Superintendent

ELM/mid

Enclosure:

cc: [30] Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

[3] Director, Office of Management Information & Program Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

LICENSEE EVENT REPORT

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | M A Y K R 1 (2) | 0 0 - 0 0 0 0 0 - 0 0 (3) | 4 1 1 1 1 (4) | (5)
LICENSEE CODE | LICENSE NUMBER | LICENSE TYPE | CAT

0 1 REPORT SOURCE L (6) | 0 5 0 0 0 0 2 9 (7) | 0 3 1 4 7 8 (8) | 0 4 1 3 7 8 (9)
DOCKET NUMBER | EVENT DATE | REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 See attached narrative.

0 3

0 4

0 5

0 6

0 7

0 8

POOR ORIGINAL

SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
S E (11)	E (12)	X (13)	V A L V E X (14)	F (15)	D (16)

(17) LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
7 8	—	0 1 0	/	0 3	L	—	0

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
B (18)	Z (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	L (25)	A 5 3 5

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 See attached narrative.

1 1

1 2

1 3

1 4

FACILITY STATUS	% POWER	OTHER STATUS (30)	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION (32)
1 5 E (28)	1 0 0 (29)	N/A	B (31)	N/A

ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
1 6 Z (33)	Z (34)	N/A	N/A

PERSONNEL EXPOSURES

NUMBER	TYPE	DESCRIPTION (39)
1 7 0 0 0 (37)	Z (38)	N/A

PERSONNEL INJURIES

NUMBER	DESCRIPTION (41)
1 8 0 0 0 (40)	N/A

LOSS OF OR DAMAGE TO FACILITY (43)

TYPE	DESCRIPTION
1 9 Z (42)	N/A

PUBLICITY

ISSUED	DESCRIPTION (45)	NRC USE ONLY
2 0 N (44)	N/A	

LER 78-010/03L-0
Yankee Atomic Electric Company
Yankee - Rowe 050 029

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES

At 1520 hours, during normal operation in operational Mode 1, the containment hydrogen control system containment isolation valve (HV-SOV-1) failed to seat properly after actuation of its solenoid operator. The solenoid operated valve failed to hold the 32 psig test pressure for any length of time, while performing leak rate procedure OP-4702, Attachment Y. HV-SOV-1 is required to be operable while in Mode 1 by Technical Specification Section 3.6.2, "Containment Isolation Valves". This is the first occurrence of this nature associated with the valve. A redundant solenoid operated valve is not part of this sample line.

The operation of the Hydrogen Venting System requires HV-SOV-1 to be in the open position. As such, the valves inability to seat properly did not reduce the system's capacity to perform its intended function. Valves down stream of HV-SOV-1 were successfully type "C" tested prior to the occurrence, therefore vapor container integrity was maintained. Based upon the above discussion the health and safety of the public and plant personnel were not adversely affected.

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS

It has been determined that the failure of HV-SOV-1 to seat properly was caused by a build-up of oil and dirt throughout the valve internals. HV-SOV-1 is a 1-1/2 inch; Atkomatic Valve Co., Inc.; Cat. No. 32861-CV; Serial No. 254334; 3000 psig rated; stainless steel solenoid valve.

The valve internals were cleaned and inspected and the rubber seal replaced in kind. Retest of the valve, after being re-installed, was satisfactorily completed at 1059 hours, March 16, 1978.

No abnormal conditions have been identified which could have caused the buildup within the valve. Therefore, further corrective actions have not been proposed or implemented at this time.

PLANT OPERATIONS REVIEW COMMITTEE RECOMMENDATIONS

This occurrence was reviewed by the Plant Operations Review Committee at Meeting No. 78-13 on March 24, 1978, with no additional comments or recommendations.

YANKEE ATOMIC ELECTRIC COMPANY

Rowe, Massachusetts 01367

January 4, 1979

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19306

Subject: Reportable Occurrence 50-29/78-34/03L-0
Neutron Shield Tank Sample Line Trip Valve
TV-207, Failed Type C Test

Dear Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.b, the attached Licensee Event Report is hereby submitted.

Very truly yours,

Herbert A. Autio
Plant Superintendent

RLB/mid

Enclosure:

cc: [30] Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

[3] Director, Office of Management Information & Program Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RT: 17-R-04 013
IMS: D-06-01-01

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 LICENSEE CODE: M A Y K R 1 (2) LICENSE NUMBER: 0 0 - 0 0 0 0 0 - 0 0 (3) LICENSE TYPE: 4 1 1 1 1 (4) CAT (5)

CON'T 01 REPORT SOURCE: L (6) DOCKET NUMBER: 0 5 0 0 0 0 2 9 (7) EVENT DATE: 1 2 0 5 7 8 (8) REPORT DATE: 0 1 0 4 7 9 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 While performing a Class C test of trip valve, TV-207, valve leakage exc
03 eeded T.S. 3.6.1.2.b. The plant was in Mode 5 and < 300 psig. The line
04 containing the trip valve was isolated by another valve during the test
05 and is normally isolated during operations. Based on this discussion the
06 re was no effects upon the public health and safety.
07
08

09 SYSTEM CODE	S D (11)
CAUSE CODE	X (12)
CAUSE SUBCODE	X (13)
COMPONENT CODE	V A L V E X (14)
COMP. SUBCODE	F (15)
VALVE SUBCODE	D (16)

(17) LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
7 8	—	0 3 4	/	0 3	L	—	0

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
X (18)	Z (19)	Z (20)	Z (21)	0 0 0 0	N (23)	N (24)	L (25)	M 1 2 0 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The cause of this event was suspected to be foreign material under the
11 Masoneilan one-half inch valve (SR #P-72987) seat. The valve was cycled
12 under pressure and then retested. The Class C retest was satisfactory.
13
14

15 FACILITY STATUS: G (28)	% POWER: 0 0 0 (29)	OTHER STATUS (30): NA	METHOD OF DISCOVERY: B (31)	DISCOVERY DESCRIPTION (32): Routine Surveillance	
16 ACTIVITY RELEASED: Z (33)	CONTENT OF RELEASE: Z (34)	AMOUNT OF ACTIVITY (35): NA		LOCATION OF RELEASE (36): NA	

PERSONNEL EXPOSURES

17 NUMBER: 0 0 0 (37) TYPE: Z (38) DESCRIPTION (39): NA

PERSONNEL INJURIES

18 NUMBER: 0 0 0 (40) DESCRIPTION (41): NA

LOSS OF OR DAMAGE TO FACILITY (43)

19 TYPE: Z (42) DESCRIPTION: NA

PUBLICITY

20 ISSUED: Z (44) DESCRIPTION (45): NA

NRC USE ONLY

(412) 625-6110

YANKEE ATOMIC ELECTRIC COMPANY

YANKEE

Rowe, Massachusetts 01367

March 16, 1979

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Reportable Occurrence 50-29/79-05/03L-0
TV-408, Service Water From VC Isolation
Valve Fai'ed Type C Test

Dear Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.b, the attached Licensee Event Report is hereby submitted.

Very truly yours,

Herbert A. Autio

Herbert A. Autio
Plant Superintendent

RLB/mid

Enclosure:

cc: [30] Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

[3] Director, Office of Management Information & Program Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RT: 17-R-Ø4-Ø13
IMS: D-Ø6-Ø1-Ø1

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

Field	Value
Licensee Code (2)	MAYKR1
License Number (3)	00-00000-00
License Type (4)	41111
CAT (5)	
Report Source (6)	L
Docket Number (7)	05000029
Event Date (8)	021479
Report Date (9)	031679

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

While performing a Type C test of TV-408, service water from VC Isolation valve the leakage exceeded T.S. 3.6.1.2.6. A similar event was reported as LER 78-34. The actions required by T.S. were met. There were no adverse effects upon the public health and safety.

System Code (11)	Cause Code (12)	Cause Subcode (13)	Component Code (14)	Comp. Subcode (15)	Valve Subcode (16)
SD	X	X	VALVEX	F	D

LER/RO Report Number (17)

Event Year		Sequential Report No.		Occurrence Code	Report Type		Revision No.
79	—	005	/	03	L	—	0

Action Taken (18)	Future Action (19)	Effect on Plant (20)	Shutdown Method (21)	Hours (22)	Attachment Submitted (23)	NPRD-4 Form Sub. (24)	Prime Comp. Supplier (25)	Component Manufacturer (26)
X		Z	Z	0000	N	N	A	M120

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

The root cause of this event was foreign material under the Masoneilan four inch valve (Model No. 138-16, SR #P-72985) seat. The valve seat was cleaned and the valve retested. The retest was satisfactory.

Facility Status (28)	% Power (29)	Other Status (30)	Method of Discovery (31)	Discovery Description (32)
E	096	NA	B	Surveillance Test

Activity Released (33)	Content of Release (34)	Amount of Activity (35)	Location of Release (36)
Z	Z	NA	NA

PERSONNEL EXPOSURES

Number (37)	Type (38)	Description (39)
000	Z	NA

PERSONNEL INJURIES

Number (40)	Description (41)
000	NA

LOSS OF OR DAMAGE TO FACILITY (43)

Type (42)	Description
Z	NA

PUBLICITY

Issued (44)	Description (45)
N	NA

NRC USE ONLY

YANKEE ATOMIC ELECTRIC COMPANY

Rowe, Massachusetts 01367

May 11, 1979

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Reportable Occurrence 50-29/79-14/03L-0
CA-V-688 Failed Class "C" Test

Dear Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.b, the attached Licensee Event Report is hereby submitted.

Very truly yours,

H. A. Autio

Herbert A. Autio
Plant Superintendent

ELM/mid

Enclosure:

cc: [30] Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

[3] Director, Office of Management Information & Program Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

RT: 17-R-04-013
IMS: D-06-01-01

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

Field	Value
01 LICENSEE CODE (2)	M A Y K R 1
LICENSE NUMBER (3)	0 0 - 0 0 0 0 0 - 0 0
LICENSE TYPE (4)	4 1 1 1 1
CAT (5)	
01 REPORT SOURCE (6)	L
DOCKET NUMBER (7)	0 5 0 0 0 2 8 9
EVENT DATE (8)	0 4 1 2 7 9
REPORT DATE (9)	0 5 1 1 7 9

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 During normal operation, while performing containment type C test, CA-V-
03 688 failed the containment leakage rate (T.S.3.6.1.2). Testing and repai
04 ring the valve isolated the hydrogen venting system contrary to T.S.3.6.
05 3.2. This is the first occurrence of this nature associated with CA-V-68
06 8. Redundant isolation valves exist for CA-V-688 and during testing a ma
07 n is available to valve in the hydrogen venting system if needed. No adv
08 erse effects to the health or safety of the public resulted by the event

	SYSTEM CODE (11)	CAUSE CODE (12)	CAUSE SUBCODE (13)	COMPONENT CODE (14)	COMP. SUBCODE (15)	VALVE SUBCODE (16)
09	S D	E	B	V A L V E X	F	D

(17) LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	7 9	—	0 1 4	/	0 3	L	—	0

ACTION TAKEN (18)	FUTURE ACTION (19)	EFFECT ON PLANT (20)	SHUTDOWN METHOD (21)	HOURS (22)	ATTACHMENT SUBMITTED (23)	NPRD-4 FORM SUB. (24)	PRIME COMP. SUPPLIER (25)	COMPONENT MANUFACTURER (26)
B	Z	Z	Z	0 0 0 0	N	N	A	V 1 3 5

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The root cause of this occurrence was crud on the valve's seating surfac
11 es. CA-V-688 is a 2" gate valve; working pressure 800 psi; temperature
12 850°F; number SW-12148; manufactured by Henry Vogt Machine Co. The valve
13 was isolated, cleaned, retested and returned to service. The time out of
14 service was 6.25 hrs. No future corrective actions are necessary.

	FACILITY STATUS (28)	% POWER (29)	OTHER STATUS (30)	METHOD OF DISCOVERY (31)	DISCOVERY DESCRIPTION (32)
15	E	0 9 8	N/A	B	Surveillance Test

	ACTIVITY RELEASED (33)	CONTENT OF RELEASE (34)	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
16	Z	Z	N/A	N/A

PERSONNEL EXPOSURES

	NUMBER (37)	TYPE (38)	DESCRIPTION (39)
17	0 0 0	Z	N/A

PERSONNEL INJURIES

	NUMBER (40)	DESCRIPTION (41)
18	0 0 0	N/A

LOSS OF OR DAMAGE TO FACILITY (43)

	TYPE (42)	DESCRIPTION
19	Z	N/A

PUBLICITY

	ISSUED (44)	DESCRIPTION (45)	NRC USE ONLY
20	N	N/A	

YANKEE ATOMIC ELECTRIC COMPANY

Rowe, Massachusetts 01367

December 4, 1979

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Reportable Occurrence 50-29[79-27]03L
HV-SOV-1& 2, Failed Surveillance and Failed Type "C" Test

Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.a, the attached Licensee Event Report is hereby submitted.

Very truly yours,

Herbert A. Autio

Herbert A. Autio
Plant Superintendent

LDF/amt

Enclosure:

cc: [30] Director, Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

[3] Director, Office of Management Information & Program Control
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

[14] NSARC Chairman

[1] Manager of Operation Quality Assurance
Yankee Atomic Electric Company

CONTROL BLOCK: | | | | | | | (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | M A Y K R 1 | (2) | 0 0 - 0 0 0 0 0 - 0 0 | (3) | 4 1 1 1 1 | (4) | | (5)

LICENSEE CODE 9–14; LICENSE NUMBER 15–25; LICENSE TYPE 26–30; CAT 57–58

CON'T 0 1 | REPORT SOURCE | 1 | (6) | 0 5 0 0 0 0 2 9 | (7) | 1 1 0 5 7 9 | (8) | 1 2 0 4 7 9 | (9)

REPORT SOURCE 60; DOCKET NUMBER 61–68; EVENT DATE 69–74; REPORT DATE 75–80

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | During plant startup in Mode 3 while performing surveillance on the Post

0 3 | Accident Hydrogen Control System HV-SOV-1 and 2 failed to seat properly

0 4 | . This is a violation of T.S.3.6.2. The valves were cleaned, retested, a

0 5 | nd passed surveillance required by T.S. but failed Type C test, T.S.3.6.

0 6 | 1.2.b. Since a manual isolation valve was closed before and after the te

0 7 | st as required by procedure, containment integrity was maintained so the

0 8 | re were no adverse effects to the public health and safety.

	SYSTEM CODE (11)	CAUSE CODE (12)	CAUSE SUBCODE (13)	COMPONENT CODE (14)	COMP. SUBCODE (15)	VALVE SUBCODE (16)
0 9	S E	E	B	V A L V E X	X	D

(17) LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
7 9	—	0 2 7	/	0 3	L	—	0

ACTION TAKEN (18)	FUTURE ACTION (19)	EFFECT ON PLANT (20)	SHUTDOWN METHOD (21)	HOURS (22)	ATTACHMENT SUBMITTED (23)	NPRD-4 FORM SUB. (24)	PRIME COMP. SUPPLIER (25)	COMPONENT MANUFACTURER (26)
X	F	Z	Z	0 0 0 0 0	N	N	N	A 5 3 5

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | The root cause of the event was an oil and dirt buildup on valve interna

1 1 | ls. The valves are 1-1/2 in. Atkomatic Valve Co., Inc.; Cat. No. 32861-C

1 2 | V. The valves were cleaned and tested on 11/4/79. On 11/5/79 the valves

1 3 | that failed Type C test were cleaned, retested and returned to service o

1 4 | n 11/05/79. The requirements of T.S.3.6.3.2 and 3.6.2 were met.

	FACILITY STATUS (28)	% POWER (29)	OTHER STATUS (30)	METHOD OF DISCOVERY (31)	DISCOVERY DESCRIPTION (32)
1 5	C	0 0 0	NA	B	Operator Observation

	ACTIVITY RELEASED (33)	CONTENT OF RELEASE (34)	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
1 6	Z	Z	NA	NA

PERSONNEL EXPOSURES

	NUMBER (37)	TYPE (38)	DESCRIPTION (39)
1 7	0 0 0	Z	NA

PERSONNEL INJURIES

	NUMBER (40)	DESCRIPTION (41)
1 8	0 0 0	NA

LOSS OF OR DAMAGE TO FACILITY (43)

	TYPE (42)	DESCRIPTION
1 9	Z	NA

PUBLICITY

	ISSUED (44)	DESCRIPTION (45)	NRC USE ONLY
2 0	N	NA	

NAME OF PREPARER Lester D. French PHONE: (413) 625-6140

GPO 917-328

YANKEE ATOMIC ELECTRIC COMPANY

Rowe, Massachusetts 01367

December 6, 1979

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Reportable Occurrence 50-29/79-29/03L
HV-SOV-1& 2, Failed Surveillance

Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.a, the attached Licensee Event Report is hereby submitted.

Very truly yours,

Herbert A. Autio

Herbert A. Autio
Plant Superintendent

LDF/amt

Enclosure:

cc: [30] Director, Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

[3] Director, Office of Management Information & Program Control
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

[14] NSARC Chairman

[1] Manager of Operation Quality Assurance
Yankee Atomic Electric Company

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

01 | MAYKR1 (2) | 00-00000-00 (3) | 4 | 1 | 1 | 1 | 1 (4) | (5)
LICENSEE CODE | LICENSE NUMBER | LICENSE TYPE | CAT

01 | REPORT SOURCE L (6) | 05000029 (7) | 110679 (8) | 120679 (9)
DOCKET NUMBER | EVENT DATE | REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 | During plant startup in mode 1 while performing OP-4216 testing of the P
03 | ost Accident Hydrogen Venting System HV-SOV-1 and 2 failed to seat prope
04 | rly. This was a violation of T.S.3.6.2. 2 similar occurrences were repor
05 | ted as LER 78-10 and LER 79-27. Since a manual isolation valve was close
06 | d before and after the test as required by procedure, containment integr
07 | ity was maintained so there were no adverse effects to the public health
08 | and safety.

09 | SYSTEM CODE SE (11) | CAUSE CODE E (12) | CAUSE SUBCODE B (13) | COMPONENT CODE VALVEX (14) | COMP. SUBCODE X (15) | VALVE SUBCODE D (16)

(17) LER/RO REPORT NUMBER: EVENT YEAR 79 | SEQUENTIAL REPORT NO. 029 | OCCURRENCE CODE 03 | REPORT TYPE L | REVISION NO. 0

ACTION TAKEN X (18) | FUTURE ACTION F (19) | EFFECT ON PLANT Z (20) | SHUTDOWN METHOD Z (21) | HOURS (22) 0000 | ATTACHMENT SUBMITTED N (23) | NPRD-4 FORM SUB. N (24) | PRIME COMP. SUPPLIER N (25) | COMPONENT MANUFACTURER A535 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 | The root cause of the event was an oil and dirt buildup on valve interna
11 | ls. The valves are 1-1/2 in. Atkomatic Valve Co. Inc.; Cat. No. 32861-CV
12 | . The valves were cleaned, inspected and returned to service on 11/9/79.
13 | The requirements of T.S.3.6.3.2 and 3.6.2 were met.
14 |

15 | FACILITY STATUS C (28) | % POWER 055 (29) | OTHER STATUS (30) NA | METHOD OF DISCOVERY B (31) | DISCOVERY DESCRIPTION (32) operator observation

16 | ACTIVITY RELEASED Z (33) | CONTENT OF RELEASE Z (34) | AMOUNT OF ACTIVITY (35) NA | LOCATION OF RELEASE (36) NA

PERSONNEL EXPOSURES

17 | NUMBER 000 (37) | TYPE Z (38) | DESCRIPTION (39) NA

PERSONNEL INJURIES

18 | NUMBER 000 (40) | DESCRIPTION (41) NA

LOSS OF OR DAMAGE TO FACILITY

19 | TYPE Z (42) | DESCRIPTION NA

PUBLICITY

20 | ISSUED N (44) | DESCRIPTION (45) NA | NRC USE ONLY

NAME OF PREPARER: Lester D. French PHONE: (413) 625-6140

GPO 821-226

YANKEE ATOMIC ELECTRIC COMPANY

Rowe, Massachusetts 01367

July 30, 1980

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Licensee Event Report 50-29/80-13
No. 4 S/G Blowdown Trip Valve, TV-401D, Type "C" Test Failure

Dear Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.b, the attached Licensee Event Report is hereby submitted.

Very truly yours,

Herbert A. Autio

Herbert A. Autio
Plant Superintendent

LDF/amt

Enclosure:

cc: [30] Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

[3] Director, Office of Management Information & Program Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

[14] NSARC Chairman

[1] Manager of Operational Quality Assurance
Yankee Atomic Electric Company

RT: 17-R-Ø4-Ø13

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

Field	Value
01 LICENSEE CODE (2)	M A Y K R 1
LICENSE NUMBER (3)	0 0 - 0 0 0 0 0 - 0 0
LICENSE TYPE (4)	4 1 1 1 1
CAT (5)	
CON'T REPORT SOURCE (6)	L
DOCKET NUMBER (7)	0 5 0 0 0 0 2 9
EVENT DATE (8)	0 6 3 0 8 0
REPORT DATE (9)	0 7 3 0 8 0

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

02 During a maintenance outage in Mode 5 while performing a Class "C" Test
03 on trip valve TV-401D valve leakage exceeded T.S. 3.6.1.2.b limits. This
04 is the first event of this nature. The trip valve is in the secondary sy
05 stem, and both primary and secondary system pressures were below 300 psi
06 g. Based on the above discussion there were no adverse effects on the pu
07 blic health or safety.
08

09	SYSTEM CODE (11)	CAUSE CODE (12)	CAUSE SUBCODE (13)	COMPONENT CODE (14)	COMP. SUBCODE (15)	VALVE SUBCODE (16)
	S D	E	B	V A L V E X	E	D

(17) LER/RO REPORT NUMBER	EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
	8 0	—	0 1 3	/	0 3	L	—	0

ACTION TAKEN (18)	FUTURE ACTION (19)	EFFECT ON PLANT (20)	SHUTDOWN METHOD (21)	HOURS (22)	ATTACHMENT SUBMITTED (23)	NPRD-4 FORM SUB. (24)	PRIME COMP. SUPPLIER (25)	COMPONENT MANUFACTURER (26)
B	Z	Z	Z	0 0 0 0	N	N	N	M 1 2 0

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

10 The root cause of this event was foreign material under the valve seat.
11 The valve is a Masoneilan 2" air operated globe valve. The valve was is
12 olated and the material removed. The valve was successfully retested. N
13 o further actions are planned at this time.
14

15	FACILITY STATUS (28)	% POWER (29)	OTHER STATUS (30)	METHOD OF DISCOVERY (31)	DISCOVERY DESCRIPTION (32)
	G	0 0 0	NA	B	Class "C" Test

16	ACTIVITY RELEASED (33)	CONTENT OF RELEASE (34)	AMOUNT OF ACTIVITY (35)	LOCATION OF RELEASE (36)
	Z	Z	NA	NA

PERSONNEL EXPOSURES

17	NUMBER (37)	TYPE (38)	DESCRIPTION (39)
	0 0 0	Z	NA

PERSONNEL INJURIES

18	NUMBER (40)	DESCRIPTION (41)
	0 0 0	NA

LOSS OF OR DAMAGE TO FACILITY (43)

19	TYPE (42)	DESCRIPTION
	Z	NA

PUBLICITY

20	ISSUED (44)	DESCRIPTION (45)	NRC USE ONLY
	N	NA	

YANKEE ATOMIC ELECTRIC COMPANY

Rowe, Massachusetts 01367

March 22, 1978

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Reportable Occurrence 50-29/78-009/03L-0
Missed Surveillance

Dear Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.b, the attached Licensee Event Report is hereby submitted.

Very truly yours,

Herbert A. Autio
Plant Superintendent

RMM/mid

Enclosure:

cc: [30] Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

[3] Director, Office of Management Information & Program Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

LER 78-009/03L-0

LICENSEE EVENT REPORT

CONTROL BLOCK: (1) (PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | LICENSEE CODE: M A Y K R 1 (2) | LICENSE NUMBER: 0 0 - 0 0 0 0 0 - 0 0 (3) | LICENSE TYPE: 4 1 1 1 1 (4) | CAT (5)

0 1 | REPORT SOURCE: L (6) | DOCKET NUMBER: 0 5 0 0 0 0 2 9 (7) | EVENT DATE: 0 2 2 1 7 8 (8) | REPORT DATE: 0 3 2 2 7 8 (9)

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 See attached

SYSTEM CODE	CAUSE CODE	CAUSE SUBCODE	COMPONENT CODE	COMP. SUBCODE	VALVE SUBCODE
S E (11)	A (12)	X (13)	Z Z Z Z Z Z (14)	Z (15)	Z (16)

(17) LER/RO REPORT NUMBER

EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE	REPORT TYPE		REVISION NO.
7 8	—	0 0 9	/	0 3	L	—	0

ACTION TAKEN	FUTURE ACTION	EFFECT ON PLANT	SHUTDOWN METHOD	HOURS (22)	ATTACHMENT SUBMITTED	NPRD-4 FORM SUB.	PRIME COMP. SUPPLIER	COMPONENT MANUFACTURER
X (18)	X (19)	Z (20)	Z (21)	0 0 0 0	Y (23)	N (24)	Z (25)	Z 9 9 9

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 See attached

1 5 | FACILITY STATUS: E (28) | % POWER: 0 8 8 (29) | OTHER STATUS (30): NA | METHOD OF DISCOVERY: C (31) | DISCOVERY DESCRIPTION (32): Surveillance Review

1 6 | ACTIVITY RELEASED: Z (33) | CONTENT OF RELEASE: Z (34) | AMOUNT OF ACTIVITY (35): NA | LOCATION OF RELEASE (36): NA

PERSONNEL EXPOSURES

1 7 | NUMBER: 0 0 0 (37) | TYPE: Z (38) | DESCRIPTION (39): NA

PERSONNEL INJURIES

1 8 | NUMBER: 0 0 0 (40) | DESCRIPTION (41): NA

LOSS OF OR DAMAGE TO FACILITY (43)

1 9 | TYPE: Z (42) | DESCRIPTION: NA

PUBLICITY

2 0 | ISSUED: N (44) | DESCRIPTION (45): NA | NRC USE ONLY

LER 78-009/03L-0
Yankee Atomic Electric Co.
Yankee Rowe 050-29

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES

Technical Specification 4.6.1.2.d requires that Type B and C test shall be conducted at intervals no greater than 24 months. Table 3.6-1 of the Technical Specification requires that the Hydrogen Vent System solenoid valves, HV-SOV-1 and HV-SOV-2 be tested. On November 26, 1977, the 24 month interval elapsed. The Hydrogen Vent System was tested on August 17, 1977, within the 24 month interval, but in a manner which eliminated the testing of HV-SOV-1 and HV-SOV-2.

As the system was tested within the 24 month interval to Appendix J criteria, the integrity of the system was proven.

Based upon the above the health and safety of the public was not adversely affected.

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS

The cause of the event was a misinterpretation of the testing requirements for HV-SOV-1 and HV-SOV-2 by plant personnel. There were no previously reported occurrences of this nature.

The two isolation valves will be tested with a Type C test prior to April 1, 1978.

Table 3.6-1 of the Technical Specification has been reviewed and it has been determined that no other testable valve(s) have been overlooked.

This event was reviewed by the Plant Operational Review Committee at meeting No. 78-11 on March 6, 1978, with no additional comments or recommendations.

YANKEE ATOMIC ELECTRIC COMPANY

Rowe, Massachusetts 01367

September 12, 1979

Mr. B. H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania

Subject: Reportable Occurrence 50-29/79-20/03L-0
Missed Surveillance (VD-TV-202)

Mr. Grier:

In accordance with Technical Specifications, Section 6.9.4.b, the attached Licensee Event Report is hereby submitted.

Very truly yours,

Herbert A. Autio

Herbert A. Autio
Plant Superintendent

ELM/amt

Enclosure:

cc: [30] Director, Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

[3] Director, Office of Management Information & Program Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

CONTROL BLOCK: (1)

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0 1 | M A Y K R 1 (2) | 0 0 - 0 0 0 0 0 - 0 0 (3) | 4 1 1 1 1 (4) | (5)

LICENSEE CODE — LICENSE NUMBER — LICENSE TYPE — CAT

0 7 8 | REPORT SOURCE L (6) | 0 5 0 0 0 0 2 9 (7) | 0 8 1 3 7 9 (8) | 0 9 1 2 7 9 (9)

DOCKET NUMBER — EVENT DATE — REPORT DATE

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES (10)

0 2 | During testing, while performing leak rate surveillance on VD-TV-202, le
0 3 | akage past the upstream isolation valves resulted in abandonment of the
0 4 | testing. It has been more than 24 months since a leak test has been comp
0 5 | leted on the valve as required by T.S. 4.6.1.2.d. This is the first even
0 6 | t of this nature associated with this test. This event did not effect th
0 7 | e ability of the trip valve to perform its intended function, therefore,
0 8 | no adverse effect upon the public health or safety resulted.

0 9 | SYSTEM CODE: S D (11) | CAUSE CODE: E (12) | CAUSE SUBCODE: B (13) | COMPONENT CODE: V A L V E X (14) | COMP SUBCODE: F (15) | VALVE SUBCODE: D (16)

(17) LER/RO REPORT NUMBER: EVENT YEAR 7 9 | — | SEQUENTIAL REPORT NO. 0 2 0 | / | OCCURRENCE CODE 0 3 | REPORT TYPE L | — | REVISION NO. 0

ACTION TAKEN: X (18) | FUTURE ACTION: X (19) | EFFECT ON PLANT: Z (20) | SHUTDOWN METHOD: 0 (21) | HOURS (22): 0 0 0 0 | ATTACHMENT SUBMITTED: N (23) | NPRD-4 FORM SUB: N (24) | PRIME COMP. SUPPLIER: A (25) | COMPONENT MANUFACTURER: M 1 2 0 (26)

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS (27)

1 0 | The root cause of this event is leakage by the seat of one or more of th
1 1 | e upstream isolation valves. The trip valve will be tested during a shut
1 2 | down scheduled for 9/8/79 when the pressure across the isolation valves
1 3 | is lower. Future leak testing will be scheduled for refueling outages wh
1 4 | ich is well within the 24 month time intervals required by T.S.

1 5 | FACILITY STATUS: E (28) | % POWER: 0 9 9 (29) | OTHER STATUS (30): N/A | METHOD OF DISCOVERY: A (31) | DISCOVERY DESCRIPTION (32): While Performing Surveillance

1 6 | ACTIVITY RELEASED: Z (33) | CONTENT OF RELEASE: Z (34) | AMOUNT OF ACTIVITY (35): N/A | LOCATION OF RELEASE (36): N/A

PERSONNEL EXPOSURES

1 7 | NUMBER: 0 0 0 (37) | TYPE: Z (38) | DESCRIPTION (39): N/A

PERSONNEL INJURIES

1 8 | NUMBER: 0 0 0 (40) | DESCRIPTION (41): N/A

LOSS OF OR DAMAGE TO FACILITY

TYPE: Z (42) | DESCRIPTION (43): N/A

PUBLICITY

ISSUED: N (44) | DESCRIPTION (45): N/A

NRC USE ONLY

NAME OF PREPARER: Edwin L. May