APPENDIX I

THREE MILE ISLAND UNIT 1

1987 REACTOR BUILDING LOCAL LEAK RATE TESTING REPORT
UPDATED - OCTOBER 9, 1987

SP 1303-11.18

11/4/86 to 3/18/87

INDEX - 1987 R. B. LOCAL LEAK RATE TESTING REPORT

REACTOR BUILDING LOCAL LEAK RATE TESTING REPORT

1987 REFUELING FREQUENCY

1. PURPOSE

1.1 To provide analysis to the Nuclear Regulatory Commission on the tenth periodic type B and type C leakage tests performed on the Three Mile Island Unit 1 Reactor Building.

This is in accordance with "Reactor Containment Leakage Testing for Water Cooled Power Reactors". Appendix J, Part 50, Title 10 Code of Federal Regulations which required the contents of this summary report to become part of the Type A test report along with the details of any other type B and type C testing performed since the previous type A test (also required per technical specification 4.4.1.1.8).

TMI Unit 1 restarted October 3, 1985 after a prolonged shutdown which began March 28, 1979 (TMI Unit II accident). For this round of leak rate testing the plant was shutdown for the 6R Refueling Outage. Testing began on November 4, 1986 and was still in progress at the time the original report was submitted (02-09-87; Record No. 5211-87-2030). This report has been updated to reflect the As-Left testing data at the completion of the 6R Refueling Outage (03-18-87).

2. SUMMARY OF WORK ACCOMPLISHED

2.1 Valve Testing/Repairs

Appendix J Type B and C leak tests were performed on the components as listed in TMI Unit 1 Technical Specification 4.4.1. In addition the following components were leak tested though not yet listed in the Technical Specification.

1. HM-V1A/B, 2A/B, 3A/B, 4A/B - New System
2. NI-V26.
3. PP-V101/102/133/134

Repairs were initiated on the following components due to higher than desirable leakage.

1. IC-V3 replaced with a new valve - upgrade
2. IC-V4 replaced with a new valve - upgrade
3. AH-V1A - Seat leakage
4. AH-V1D - Seat leakage

5. Penet 211 - Test connection cap leak - replaced improper fitting (double /tubing connector as-found rather than the single connector desired. Resulted in pipe threads mating with tubing threads with resultant thread leakage).

6. MU-V2A - Packing leakage

7. PP-V101/102/133/134 - Seat leakage

8. CA-V5A/B - Seat leakage

9. LR-V1/10 - Seat leakage

Additional leak tests were performed on the following components:

1. CA-V1/2/3/13 - Modified packing configuration

2. FTT East/FTT West - Retested after refueling

3. MU-V2A/2B - Modified packing configuration

4. PENET. 104/210/211 - Retested after refueling

5. HR-2A/B/4A/B - Associated flanged service connections tested before being opened and after being closed.

2.2 Access Hatch Testing/Repairs

2.2.1 Door Seals SP 1303-11.25 (Ref. 7.6)

Door seal leak tests are performed as required by Technical Specification 4.4.1.2.5. All of the tests satisfied the surveillance procedure administrative acceptance criteria.

2.2.2 Overall Hatch Test (Ref. 7.5)

Semiannual integrated type leak tests were performed as required by Technical Specification 4.4.1.2.5. All of the tests satisfied the surveillance procedure acceptance criteria.

2.3 Penetration Pressurization SP 1303-11.24 (Ref. 7.5)

Quarterly readings are recorded from the flow rotameters which supply air pressure or nitrogen pressure to reactor building mechanical and electrical penetrations as required by Technical Specification 4.4.1.2.5. No penetration leakage problems were noted although flowmeter malfunctions required meter repair.

3. METHODS OF TESTING

3.1 Valve Test Methods

Testing was performed by use of TMI Unit 1 surveillance procedure SP 1303-11.18 Reactor Building Local Leak Rate Testing. This procedure gives detailed guidance on the test equipment and methods to be used for each penetration/valve. The following general philosophy is contained in the surveillance procedure.

3.1.1 Use air or nitrogen at a pressure differential across the valve greater than P_a (50.6 - calculated accident pressure). 55 psig nitrogen was normally used.

3.1.2 Assure that the pressure is exerted in the accident test direction unless it can be demonstrated that pressurizing in the opposite direction is as conservative. Butterfly valves AH-V1B/1C, and globe valves WDG-V4, DH-V64, SA-V3, and IA-V20 were tested in the reverse direction.

3.1.3 Assure that the test volume is drained of liquid so that air or nitrogen test pressure is against valve seats.

3.1.4 Assure that the test verifies valve packing integrity in those cases where the packing would be an R. B. leakage boundary.

3.1.5 Assure adequate time period for stabilization of test conditions.

3.1.6 Assure test equipment is calibrated and used in a manner consistent with the data accuracy desired (weekly meter standardization was performed during the test program to verify meters accurate within $\pm$ 4% full scale (Ref. 7.1).

3.1.7 Assure valves to be tested are closed by the normal method prior to testing.

3.1.8 Document as-found conditions (prior to adjustments/repairs) and as-left conditions.

3.1.9 Record test instrument scale readings prior to doing any data corrections.

3.1.10 Assure that system drains and vents which could serve as containment isolation valves, are closed and capped and tagged after completion of the test program.

A training program prior to the refueling outage was performed to help assure that the above philosophy was understood by the personnel involved in the testing.

3.2 Access Hatch Test Methods

3.2.1 Door Seal Leak Tests-Method

Door seal leak tests were performed by use of SP 1303-11.25 (Ref. 7.6). This procedure gives detailed guidance on the test equipment and methods to be used.

The door seal tests are performed by pressurizing the interspace between the double seals on each door with metered air at the manufacturers recommended test pressure of 10 psig. After stabilization the air rotameter indicates the rate of air input required to maintain the test pressure.

3.2.2 Overall Hatch Leak Test -- Semi-annual overall hatch leak testing was performed by use of TMI Unit 1 Surveillance Procedure SP 1303-11.18 Reactor Building Local Leak Rate Testing. This procedure gives detailed guidance on the test equipment and methods to be used. The overall integrated leak test verifies the integrity of all of the following barriers:

a. Hatch shell/welds,

b. Rubber door seals,

c. Teflon operating shaft packing,

d. Bulkhead electrical penetrations,

e. Penetration pressurization check valves,

f. Emergency air flange and associated "O" rings on outer bulkhead,

g. Bulkhead equalizing ball valves and associated mounting flanges/"O" rings.

The overall leak test is performed by pressurizing the hatch to greater than calculated accident pressure and observing the rate of pressure drop on a high accuracy (Heise) pressure gage.

Pressure corrections are made by reference to a barometer. Minimum test duration is 4 hours after a 1 hour stabilization period.

3.3 Penetration Pressurization - Method

Quarterly readings were taken on the flow rotameters which are permanently installed in the penetration pressurization system. These readings represent the air/nitrogen makeup rate required to maintain approximately 60 psig in mechanical penetrations and 30 psig in electrical penetrations. High meter readings have occasionally occurred but these have been attributed to leaks in the compression fittings in the penetration pressurization system or to malfunctioning (stuck) rotameters. Testing was per plant surveillance procedure SP 1303-11.24 (Ref. 7.5).

4. TEST EQUIPMENT USED

4.1 Valve Test Equipment (See Figure 1)

a. Rotameters - Sets of 3

Mfgr. - Brooks Inst. Co.

Model - 1114 Full View

Ranges:

Float Mat'l.	Tube No.	Range
Pyrex	R-2-15D	8-1,120 SCCM
Sapphire	R-2-15C	100-12,200 SCCM
Carboloy	R-6-15B	1,000-142,000 SCCM

Accuracy ± 2% full scale industrial accuracy

b. Temperature Indicators (as follows or similar)

Mfgr. - Ashcroft

Model - EH or AH / 3" or 5" Dial

Range - 30°-130°F

Accuracy - ± 2°F

c. Pressure Indicators (as follows or similar)

Mfgr. - Ashcroft

Model - 1279 - 4-1/2" Dial

Range - 0-60 or 0-100 psig

Accuracy - ± 2 psig

d. Pressure Regulator (as follows or similar)

Mfgr. - Union Carbide Corp.

Model - UPG 3-75-580

Range - 0-100 psi output / 0-3000 psi input

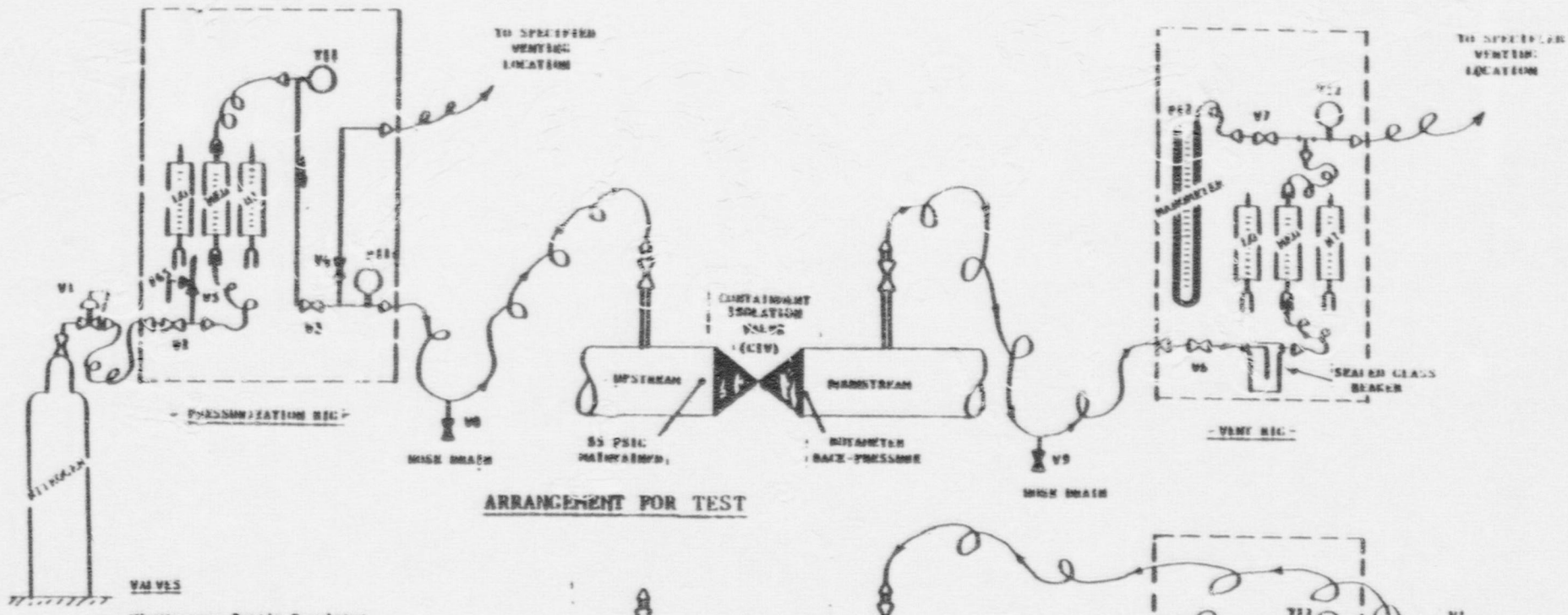

FIGURE 1

VALVES

V1-Nitrogen Bottle Regulator
V2/V3/V6/V7 3/8 or 1/2" Ball Valve
V4-Toggle Type Globe Valve
V5-65# Safety Valve

PRESSURE INDICATORS

PT1-0 to 60 psig usage range with 2 psi increments
PT2-Manometer with 36 inch long scale

TEMPERATURE INDICATORS

TT1/TT2 0-100°F usage range with 2°F increments

ROTAMETERS

	Tube#	Float	0 psig	55 psig
Low	R 2 15a	Black Glass	0-300SCCM	65-1,125SCCM
Med	R 2 15 C	Syn. Sapphire	100-3,300SCCM	300-12,000SCCM
High	R 6 15 B	Carboloy	1,000-61,000SCCM	3000-142,000SCCM

- Range -

- ISOLATION VALVE TEST RIG -

e. Calibration Rotameters (Set of 2)

Mfgr. - Brooks Inst. Co.

Models - 1110-05K2B1Z49, 1110-08K2B1Z06

Ranges - 20-16,000 SCCM, 3,600-234,000 SCCM

Repeatability - ± 1/4% of instantaneous

Accuracy - ± 1% instantaneous

f. Flow rate Calibrator

Mfgr. - Brooks Inst. Co.

Model - 1056A

Range 0 to 2,400 SCCM

Accuracy - ± 0.2% of indicated volume

4.2 Access Hatch Test Equipment

a. Precision Pressure Gage (as follows or similar)

Mfgr. - Heise

Model - CM

Range - 0.60 psig

Resolution - 0.25 psig

Accuracy - 0.1%

b. Barometer (as follows or similar)

Mfgr. - Pennwalt

Model - FA185260A

Range - 10.8 - 15.5 psia

Resolution - 0.005 psia

Accuracy - 0.1%

4.3 Penetration Pressurization Test Equipment

a. Flow Rotameters - (Permanent System Equipment)

Mfgr. - Brooks Inst. Co.

Model - 1114

Range - 0-10 SCFH at 60 psia air

Accuracy - ± 2% Industrial accuracy

5. SUMMARY AND INTERPRETATION OF DATA

5.1 Valve Test Results

As-Found/As-Left Leakage to this date - Also see tabulation of individual results in Attachment #2.

	Total Leakage	Tech. Spec. Limit	% Tech. Spec. Limit
As-Found MAXPATH	>162,105 SCCM	104,846 SCCM	>100%
As-Left MAXPATH	29,906 SCCM	104,846 SCCM	<30%

NOTE: The total shown above is "maximum pathway" and not the total of all valve leakages. i.e., Only the highest valve leakage on each penetration is counted. This number is labeled as "MAXPATH" on the tabulation of results in Attachment 2.

EXAMPLE: Penetration XYZ has three containment isolation valves inside the reactor building in parallel and one outside. The leakage from the three inside totals 500 SCCM and the outside valve is 1000 SCCM. The penetration leakage is counted as 1,000 SCCM not 1,500 SCCM.

5.2 Access Hatch Test Results

5.2.1 Overall Hatch Leakage - SP 1303-11.18 (Ref. 7.2) - See the computer tabulation of 1987 leak rates in Attachment II.

5.2.2 Door Seal Leakage - SP 1303-11.25 (Ref. 7.6)

None of the door seal leak tests exceeded the 3 SCFH administrative leakage limit. Typically the leakage was <1 SCFH.

5.3 Penetration Pressurization (PP) Leakage - SP 1303-11.24 (Ref. 7.5)

	Leakage Rates - SCFH	
	Mechanical	Electrical
Date		
12/12/86	21.5	0.0
03/14/87	8.5	0.0

There is no technical specification limit on penetration pressurization system leakage. The system leakage is maintained as low as practical.

6. ERROR ANALYSIS

6.1 Valve Testing Errors (For purge valves see Section 6.2)

The flow meters used in the field have normal industrial accuracies of ± 2% full scale in the 10-100% (15-150 mm) scale range. Prior to use, mm versus sccm graphs were developed for the meters by 10 point calibrations using high accuracy (± 1% instantaneous) lab rotameters. During the leak test program, weekly 3 point standardizations were performed on the field rotameters to verify continued accuracy. The acceptance criteria for these standardizations was a variance of no more than 4% from the calibration graphs. If meters were repaired or the 3 point standardization exceeded the inaccuracy limit, a new 10 point calibration was performed. Scale readings on the leak rate procedure (SP 1303-11.18) data sheets were evaluated and corrected using the methods in Attachment 1. Conservative bias was introduced into the results by assuming 15 mm (10% of scale) as the minimum scale. Approximately half of the test results actually showed a minimum scale reading. More involved error corrections were not considered meaningful based on the acceptable total leakage as-found and the low total leakage as-left.

6.2 Access Hatch and Purge Valve Testing Errors

The measured pressure drops were corrected by adding the minimum scale increment of the gage used for both the heise gage and the barometer. This conservatively corrected for the resolution and repeatability errors. Gages used were recently calibrated. A minimum one hour temperature/pressure stabilization period was used prior to each pressure drop test. The access hatches and purge valves are not instrumented to allow temperature corrections.

6.3 Penetration Pressurization Testing Errors

These test results are used for information only and do not count toward the total leakage limit for Technical Specification conformance. The meters, installed permanently in the system, have ± 2% full scale industrial accuracy.

7. REFERENCES

7.1 1430-Y-22 Standardization of Flow Rotameters (Rev. 4)

7.2 SP 1303-11.18 Reactor Building Local Leak Rate Testing (Rev. 38) w/TCN 1-86-0179 (RB-V2A/7 Testing).

7.3 Three Mile Island Unit 1 Technical Specification 4.4.1

7.4 TMI Surveillance File (for Data sheets)

7.5 SP 1303-11.24 R. B. Local Leakage Penetration Pressurization (Rev. 6)

7.6 SP 1303-11.25 R. B. Local Leakage Access Hatch Door Seals (Rev. 11).

7.7 SP 1303-11.18 Reactor Building Local Leak Rate Testing (Rev. 38) w/TCN 1-87-0021 (PP-V101/102/133/134 Testing).

ATTACHMENTS

ATTACHMENT 1

RESULTS EVALUATION PROCEDURE

(SP 1303-11.18 Enclosure 9)

Attachment 1

R. 8. LOCAL LEAK RATE TESTING

RESULTS EVALUATION

The vent rotameter reading will be used if it can be demonstrated by the test data that all significant CIV leakage is being accounted for. If CIV packing, fluid block check valve, or gasket leakage was evident the supply rotameter results will be used unless this non-seat leakage was measured reliably and documented.

FOR USE OF SUPPLY ROTAMETER DATA:

Procedure:

a) Record supply meter reading in (1) below*. Also identify the meter used by tube # in (8) below and the metering pressure in (9).

b) Convert meter units in SCCM units using latest lab meter calibration curve. Enter in (3) below.

c) Correct results for temperature. Enter supply temperature in (4) below.

Calculate and enter in (7) below.

FOR USE OF VENT ROTAMETER DATA:

Procedure:

a) Record vent meter reading in (1) below.*

b) Record downstream verification meter reading in (2) below. Also identify the respective meters used in (8) below and the metering pressure in (9).

c) Convert meter units to SCCM units using latest lab meter calibration curve. Enter in (3) below.

d) Correct results for temperature. Enter vent temperature (^{o}F) in (4) below.

then

Calculate and enter in (5) below

e) If measurements of any other significant leakage paths (fluid block check valve, packing) are being claimed enter corrected flow (SCCM) in (6) below.

* If meter scale reading was less than 15 mm (minimum scale) use 15 mm in calculations.

(MM) (SCCM)

((1) + (2)) convert ((3)) X $\sqrt{\frac{530}{(4) + 460}}$ = (5) SCCM

+ (6) SCCM

(8) (Identify meters used)

@ (9) (Meter Pressures)

= CIV Leakage (7) SCCM

ATTACHMENT 2

DATA 1987 TYPE C

REACTOR BUILDING LEAK RATE TESTING

LOCAL LEAK RATE TEST RESULTS
THREE MILE ISLAND UNIT 1 REACTOR BUILDING
1987 1987 1987 1987 1987 1987 1987 1987

RESULTS GIVEN IN STD. CUBIC CENTIMETERS PER MINUTE (SCCM)

NO	TAG	DESC	OPER	SIZE	ASFOUND	ASLEFT	COMTS87	DATE
1	AH-V1A/B	BFLY	P/MO	48	.01	546	ASFD86	3/16/87
2	2ND			48	.01	.01		
3	3RD			48	.01	.01		
4	4TH			48	.01	.01		
5	AH-V1C/D	BFLY	MO/P	48	.01	2750	ASFD86	3/16/87
6	2ND			48	.01	.01		
7	3RD			48	.01	.01		
8	4TH			48	.01	.01		
9								
10								
11	CA-V1	GLOBE	MO	1	71	65	OK	3/13/87
12	CA-V2	GATE	P	1	1132	65	HIGH	3/13/87
13	CA-V3	GLOBE	MO	1	71	52	OK	3/14/87
14	CA-V4A	GLOBE	MO	1	71	71	OK	12/3/86
15	CA-V4B	GLOBE	MO	1	98	98	OK	12/3/86
16	CA-V5A	GATE	P	1	4407	243	HIGH	3/10/87
17	CA-V5B	GATE	P	1	4047	250	HIGH	3/10/87
18	CA-V13	GLOBE	MO	1	71	52	OK	3/14/87
19	CA-V189	GATE	P	2	1389	1389	HIGH	12/1/86
20	CA-V192	LFT CHK	N/A	2	71	71	LOW	12/1/86
21								
22								
23	CF-V2A	GLOBE	MO	1	40	40	OK	11/21/86
24	CF-V2B	GLOBE	MO	1	38	38	OK	11/22/86
25	CF-V12A	LFT CHK	N/A	1	13	13	OK	11/25/86
26	CF-V12B	LFT CHK	N/A	1	88	88	OK	11/25/86
27	CF-V19A	GATE	P	1	1306	1306	HIGH	11/26/86
28	CF-V19B	GATE	P	1	32	32	OK	11/25/86
29	CF-V20A	GATE	P	1	367	367	OK	11/22/86
30	CF-V20B	GATE	P	1	38	38	OK	11/22/86
31	CM-V1	BALL	P	1	75	75	OK	12/9/86
32	CM-V2	BALL	P	1	319	319	HIGH	12/9/86
33	CM-V3	BALL	P	1	75	75	OK	12/9/86
34	CM-V4	BALL	P	1	75	75	OK	12/9/86
35	DH-V64	GLOBE	HW	2	39	39	OK	1/6/87
36	DH-V69	STOP CHK	HW	2	46	46	OK	1/6/87
37								
38								
39	FTTEAST	FLANGE	N/A	30	145	338	OK	3/4/87
40	FTTWEST	FLANGE	N/A	30	52	353	OK	3/4/87
41	HM-V1A	GLOBE	S	.5	75	75	OK	12/6/86
42	HM-V1B	GLOBE	S	.5	75	75	OK	12/6/86
43	HM-V2A	GLOBE	S	.5	75	75	OK	12/6/86
44	HM-V2B	GLOBE	S	.5	75	75	OK	12/6/86
45	HM-V3A	GLOBE	S	.5	75	75	OK	12/6/86
46	HM-V3B	GLOBE	S	.5	75	75	OK	12/6/86
47	HM-V4A	GLOBE	S	.5	75	75	OK	12/6/86
48	HM-V4B	GLOBE	S	.5	75	75	OK	12/6/86
49	HP-V1	GATE	HW	6	75	75	OK	12/9/86
50	HP-V6	GATE	HW	6	75	75	OK	12/9/86
51	HR-V2A/B	GLOBE	HW	2	66	86	OK	12/10/86
52	HR-V4A/B	GLOBE	HW	2	273	76	OK	12/10/86
53	HRV22A/B	GLOBE	S	2	76	76	OK	12/10/86
54	HR-V23A	GLOBE	S	2	76	76	OK	12/10/86
55	HR-V23B	GLOBE	S	2	76	76	OK	12/10/86
56								

LOCAL LEAK RATE TEST RESULTS
THREE MILE ISLAND UNIT 1 REACTOR BUILDING
1987 1987 1987 1987 1987 1987 1987 1987

RESULTS GIVEN IN STD. CUBIC CENTIMETERS PER MINUTE (SCCM)

NO	TAG	DESC	OPER	SIZE	ASFOUND	ASLEFT	COMTS87	DATE
57								
58	IA-V6/20	GLOBE	HW	2	52	52	OK	12/5/86
59	IC-V2	GATE	MO	6	190	190	OK	11/12/86
60	IC-V3	GATE	P	6	18500	66	NEWVALVE	2/3/87
61	IC-V4	GATE	P	6	71	42	NEWVALVE	1/24/87
62	IC-V6	GATE	P	3	67	67	OK	11/17/86
63	IC-V16	CHECK	N/A	4	141	141	OK	11/17/86
64	IC-V18	CHECK	N/A	6	71	71	OK	11/11/86
65	LR-V1/10	GATE	HW	6	1904	76	OK	12/5/86
66	LR-V4	GLOBE	HW	.75	52	52	OK	12/5/86
67	LR-V5	GLOBE	HW	2	52	52	OK	12/5/86
68	LR-V6	GLOBE	HW	2	52	52	OK	12/5/86
69	LR-V49	GATE	HW	6	76	76	OK	12/5/86
70								
71								
72	MU-V2A	GLOBE	MO	2.5	52874	65	PACKING	3/7/87
73	MU-V2B	GLOBE	MO	2.5	72	106	OK	3/7/87
74	MU-V3	GATE	P	2.5	66	66	OK	3/6/87
75	MU-V18	GATE	P	2.5	330	330	OK	12/8/86
76	MU-V20	GATE	P	4	66	66	OK	11/15/86
77	MU-V25	GLOBE	MO	4	88	88	OK	11/26/86
78	MU-V26	GATE	P	6	88	88	OK	11/26/86
79	MU-V116	PIST CHK	N/A	1.5	1319	1319	OK	11/15/86
80								
81	NI-V26	GLOBE	HW	1	71	71	OK	12/2/86
82	NI-V27	GLOBE	HW	1	71	71	OK	12/2/86
83	NS-V4	GATE	MO	1.5	621	621	OK	11/20/86
84	NS-V11	CHECK	N/A	8	1810	1810	OK	11/19/86
85	NS-V15	GATE	MO	8	1042	1042	OK	11/19/86
86	NS-V35	GATE	MO	8	7607	495	HIGH	12/19/86
87								
88								
89	PENET104	BLK FLG	N/A	2	71	71	OK	3/14/87
90	PENET105	BLK FLG	N/A	10	45	45	OK	12/13/86
91	PENET106	BLK FLG	N/A	4	45	45	OK	12/13/86
92	PENET216	BLK FLG	N/A	2	45	71	OK	3/14/87
93	PENET211	BLK FLG	N/A	2	18452	71	CAP LEAK	3/14/87
94	PENET241	BLK FLG	N/A	10	92	45	OK	12/12/86
95	PP101/02	LFT CHK	N/A	1/2	37000.001	6142	FAILED	3/10/87
96	PP133/34	LFT CHK	N/A	1/2	3120	5491	HIGH	3/13/87
97								
98								
99								
100								
101	RB-V2A	GATE	MO	8	880	880	OK	11/18/86
102	RB-V7	GATE	MO	8	0	0		11/22/86
103	SA-V2/3	GLOBE	HW	2	88	88	OK	3/17/87
104	SF-V23	GATE	HW	8	42	42	OK	12/4/86
105	WDG-V3/4	GL/GA	MO/SOL	2	82	82	OK	12/2/86
106	WDL-V303	GLOBE	MO	4	25	25	OK	11/24/86
107	WDL-V304	GATE	D	4	25	25	OK	11/24/86
108	WDL-V534	GATE	P	8	71	71	OK	12/11/86
109	WDL-V535	GATE	P	8	71	71	OK	12/11/86
110								
111								

LOCAL LEAK RATE TEST RESULTS
THREE MILE ISLAND UNIT 1 REACTOR BUILDING
1987 1987 1987 1987 1987 1987 1987 1987

RESULTS GIVEN IN STD. CUBIC CENTIMETERS PER MINUTE (SCCM)

NO	TAG	DESC	OPER	SIZE	ASFOUND	ASLEFT	COMTS87	DATE
112	EQPFLG	FLANGE	N/A	216	243	77	HIGH	1/2/87
113	PERACCES	MISC.	N/A	96	1783	1783	OK	3/17/87
114	2ND	MISC	N/A	96				
115	EMEACCES	MISC	N/A	96	891	891	OK	3/18/87
116	2ND	MISC	N/A	96				
117								
118								
119	MINPATH				67426.021	23668	FAILED	11/11/86
120	MAXPATH *				162105.021	29906	FAILED	3/18/87
121	ACC CRIT				104847	104847		

* The semiannual and quarterly tests performed nearest to the round of refueling frequency testing are added into the "MAXPATH" calculation. For valves in series the valve with highest leakage is used in the "MAXPATH" calculation. For valves in parallel or where the inner and outer valves can not be tested separately, the total leakage is used.

LOCAL LEAK RATE TEST RESULTS

THREE MILE ISLAND UNIT 1 REACTOR BUILDING

Following is the terminology used in the previous computer data:

1) .1 - (Alone) or any other number other than zero in the first decimal place means test scheduled.

2) .01 - (Alone) means no data available for the year or that the test was delayed. (e.g. valve not installed yet or not in previous testing scope.)

3) .001 - (Or any number other than zero in the third decimal place) after a leak rate (i.e. 59500.001) means actual leak rate was greater than measured/recorded value.

4) AsFound - leak rate (SCCM) in the As-Found condition before any repairs or adjustments.

5) AsLeft - The leak rate (SCCM) after any adjustments/repairs.

6) Dates - Date of the last acceptable test results for the item.

7) Desc - Description of the valve or penetration.

8) Oper - Type of valve operator (actuator).

9) Notest - The Tech Spec scope did not require this valve to be tested during the respective year.

10) Novalve - This valve was installed during a later refueling outage.

11) Comments - Cognizant Engineer comments about the results:

   A) Failed - Exceeded the plant established leakage rate limit from SP 1303-11.18 Enclosure 10 which made repair/adjustment necessary.

   B) High/Low - Subjective judgement of cognizant engineer. Represents the results with respect to the leakage which the type of leakage barrier (e.g. gate valve, globe valve, check valve, flange, etc.) is considered to be capable of without extraordinary repair/adjustment

   C) OK - No problems with leakage.

   D) Other - E.G. newvalve, novalve notest, repacked seatwork, stembent, etc. (self-explanatory).

   E) CAPLEAK - see para. 2.1.5

      PACKING - see para. 2.1.6.

12) Size - The nominal pipe size for the leakage barrier.

13) ASFD86 - Identifies that the ASFD data to be used for AH-V1A/B & C/D is the last test data reported for 1986; see Attachment 2 of Appendix H.