THIS DOCUMENT ASSIGNED TO J. BLESSING. NOTIFY [illegible] WHEN DOCUMENT IS REASSIGNED.

USER CONTROLLED

Expiration Date 11-15-90

PROCEDURE COVER SHEET

PENNSYLVANIA POWER & LIGHT CO. SUSQUEHANNA STEAM ELECTRIC STATION	
DCP 89-3018A TYPE A RETEST	TP-159-014 Revision 0 Page 1 of 19

EFFECTIVE DATE 10/5/90

PERIODIC REVIEW FREQUENCY AND EXPIRATION DATE (check one):

(___) Procedure exempt from periodic review. Procedure will not expire.

(X) Periodic Review Frequency is: 2 yrs.

Expiration Date: 10/5/92

Revised Expiration Dates: _____

PROCEDURE TYPE (check one): (X) PORC (___) NON-PORC

REVIEW TYPE (check one):

(___) Expedited Review. PORC Review not required.

(___) Alternate Review. PORC Review not required.

(X) PORC Review. PORC Meeting No. 90-126

Prepared by [signature] Date 10/1/90

Reviewed by Cynthia Smith Date 10/2/90
Responsible Supervisor

Recommended [signature] Date 10/02/90
Section Head/Manager

Approved by [signature] Date 10/4/90

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10051992

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ATTACHMENTS

1.0 PURPOSE

To provide required 10CFR Appendix J penetration testing of six new Containment Atmosphere Sample lines added per DCP 89-3018A.

2.0 DISCUSSION

DCP 89-3018A will add a total of six new sample lines thru four existing spare primary containment penetrations.

Since each penetration must be modified to accommodate the new sample lines a retest of the affected area is required per 10CFR Part 50 Appendix J. The results of the test will be added to the results of the last Type A test and compared to the allowable limit. The final report will be transmitted to the NRC in a summary technical report as specified in 10CFR50.4.

3.0 REFERENCES

3.1 FSAR Section 6.2.6

3.2 AD-QA-103, Protective Permit and Tag System

3.3 AD-QA-422, Surveillance Testing Program

3.4 AD-QA-412, Leakage Rate Tests Program

3.5 AD-00-705, Access Control and Radiation Work Permit System

3.6 Code of Federal Regulations, 10CFR50; Appendix A

3.7 Code of Federal Regulations, 10CFR50; Appendix J

3.8 ANSI N45.2-1972, ANS Leakage Rate Testing of Containment Structures

3.9 P&ID M-159, Primary Containment Leak Rate Testing

3.10 PE-000-002, Operation of LRM Model 14342 and Surge Tank Assembly

3.11 DCP 89-3018A, Addition of New CRM Sample Lines

4.0 TEST EQUIPMENT

4.1 Thaxton Plugs (1) 8", (1) 4", (1) 1"

4.2 One (1) Leak Rate Monitor (0-2000 SCCM range)

5.0 PRECAUTIONS

5.1 Ensure all personnel are removed from the area in which the test plugs may be ejected to at test pressures.

6.0 PREREQUISITES

NOTE: Signoff for reconfirmation of steps is required if a significant amount of time (3 days) has passed between As Found and As Left testing, or if Plant/System conditions have changed as determined by Operations. Mark reconfirmation signoffs NA if not required.

6.1 No other testing being performed within the LLRT boundary as defined in applicable LLRT Test Package. (OPERATIONS)

[signature] / 10-7-90 NA /
CONFIRMED RECONFIRMED

6.2 RWP per AD-00-705, Access Control and Radiation Work Permits, obtained for specified LLRT Test Package. (MAINTENANCE)

[signature] / 10-7-90 NA /
CONFIRMED RECONFIRMED

6.3 Plant in condition 4 or 5 to support test lineup intended in applicable LLRT Test Package. (OPERATIONS)

[signature] / 10-7-90 NA /
CONFIRMED RECONFIRMED

6.4 Differential test pressure must be adjusted, whenever necessary, to account for any backpressure or static pressure above atmospheric that may exist across the component under test, such that the specified Minimum Differential Test Pressure is ensured. The differential pressure across the containment isolation barrier under test shall be 45.0 psig minimum and 49.5 psig maximum.

LRM – mm 237A 8-22-90 / 11-22-90
Fluke – mm 282 2-2-90 / 2-2-91
Therm – mm 108C 5-16-90 / 5-16-91

Fluke – mm 282 2-2-90 / 2-2-91
Therm. mm 298 3/29/90 / 3-29-91
LRM mm 138A 9-7-90 / 12-7-90

6.5 Record the Measurement and Test Equipment calibration date and calibration due date for equipment used in performing this test. (MAINTENANCE)

Identification Number	Type	Calib. Date/Calib. Due Date
mm 234	Leak Rate Monitor	8-18-90 / 11-18-90
mm 233	Leak Rate Monitor	8-18-90 / 11-18-90
mm 278	Temperature Monitor	2-3-90 / 2-3-91
mm 244	Temperature Monitor	7-14-90 / 7-14-91
272B	Thermocouple	3-29-90 / 3-29-91
mm 128e	Thermocouple	3-29-90 / 3-29-91

6.6 Maintenance has reviewed the scope of this test with respect to "foreign potential" in accordance with AD-QA-103 and concurs with the performance of this test.

Foreign Potential: YES/(NO) Foreign Potential: YES/NO

[signature] / 10-07-90 NA /
CONFIRMED RECONFIRMED

6.7 If a foreign potential exists, the permit holder has reviewed and complied with the requirements of AD-QA-103.

PERMIT NO. N/A PERMIT NO. _____

N/A / NA /
CONFIRMED RECONFIRMED

6.8 Shift Supervision has conducted a review of the system status file (i.e., permits, system mylars, ERF's, etc.) with respect to "foreign potential" in accordance with AD-QA-103 and has granted permission to perform this test.

Foreign Potential: YES/(NO) Foreign Potential: YES/NO

[signature] / 10-7-90 NA /
CONFIRMED RECONFIRMED

6.9 Construction of DCP 89-3018A is complete to the extent required to perform this test. (MAINTENANCE)

(X-S) TEST

[signature] / 10-7-90 NA /
CONFIRMED RECONFIRMED

LRM mm 233 8/17/90
11/17/90

Fluke mm 250 2/3/90
2/3/91

Therm mm 272B 3/29/90
3/29/91

7.0 PROCEDURE

7.1 X-5 LLRT

A temporary test flange has been installed (welded) on the 8" penetration pipe with a ½" threaded test fitting (or suitable alternate) for LLRT hookup. PCAF

7.1.1 ~~An 8" Thaxton Plug has been installed per Thaxton Operating Instructions with Thaxton safety gag on the inside of penetration X-5 as per Attachment B.~~

RP 10/12/90 CONFIRMED / NA RECONFIRMED /

7.1.2 Valve 157225 is closed.

RP 10/12/90 CONFIRMED / NA RECONFIRMED /

7.1.3 Valve 157231 is closed.

RP 10/12/90 CONFIRMED / NA RECONFIRMED /

7.1.4 Install the LRM to the test port on the ~~8" Thaxton Plug.~~ Temporary Test Flange. PCAF

RP 10/12/90 CONFIRMED / NA RECONFIRMED /

7.1.5 A personnel exclusion area has been established at penetration X-5 behind 3" HBD-1053, 4" HBD-1054 and 3" HBD-129, 130.

RP 10/12/90 CONFIRMED / NA RECONFIRMED /

7.1.6 Maintenance to perform LLRT No. 1 in accordance with PE-000-002 and Attachment C specifying LRM scale used on Attachment C.

RP / 10/12/90 CONFIRMED / NA RECONFIRMED /

7.1.7 SNOOP the exterior exposed welds at penetration X-5 for any evidence of leakage. Indicate results in the remarks section of Attachment C.

RP / 10/12/90 CONFIRMED / NA RECONFIRMED /

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7.1.8 Increase pressure to 61-63 psig and hold for 10 minutes to support ASME required testing.

PERFORMED PER CWO-C-03747 N/A. Per Jim Eletchline mJB 10/12/90 / NA
CONFIRMED RECONFIRMED

7.1.9 Depressurize the test volume by venting and removing the LRM and slowly opening valve 157225 and 157231.

S.S. 10/12/90 / NA
CONFIRMED RECONFIRMED

7.1.10 ~~Remove the 8" test plug installed per step 7.1.1.~~ Inform IEG that removal of the temporary test flange may proceed. PCAF

MAU 10/12/90 / NA
CONFIRMED RECONFIRMED

7.1.11 Remove all test equipment from the test area.

S.S. 10/12/90 / NA
CONFIRMED RECONFIRMED

7.2 X-91A LLRT

7.2.1 Install a LRM to the threaded connection on 1" HCB-160 and 161 inside penetration X-91A via a "Y" connection. (Reference Attachment B)

* /
CONFIRMED RECONFIRMED

7.2.2 Close valves 157237 and 157243.

* /
CONFIRMED RECONFIRMED

7.2.3 Maintenance to perform LLRT No. 2 in accordance with PE-000-002 and Attachment D, specifying LRM scale used on Attachment A.

* /
CONFIRMED RECONFIRMED

* See original page 7 of 19 for auth. signature

7.1.8 Increase pressure to 61-63 psig and hold for 10 minutes to support ASME required testing.

_____/_____ CONFIRMED _____/_____ RECONFIRMED

7.1.9 Depressurize the test volume by venting and removing the LRM and slowly opening valve 157225 and 157231.

_____/_____ CONFIRMED _____/_____ RECONFIRMED

7.1.10 Remove the 8" test plug installed per step 7.1.1.

_____/_____ CONFIRMED _____/_____ RECONFIRMED

7.1.11 Remove all test equipment from the test area.

_____/_____ CONFIRMED _____/_____ RECONFIRMED

7.2 X-91A LLRT

7.2.1 Install a LRM to the threaded connection on 1" HCB-160 and 161 inside penetration X-91A via a "Y" connection. (Reference Attachment B)

J Blessing / 10-7-90 CONFIRMED NA / _____ RECONFIRMED

7.2.2 Close valves 157237 and 157243.

J Blessing / 10-7-90 CONFIRMED NA / _____ RECONFIRMED

7.2.3 Maintenance to perform LLRT No. 2 in accordance with PE-000-002 and Attachment D, specifying LRM scale used on Attachment A.

J Blessing / 10-7-90 CONFIRMED NA / _____ RECONFIRMED

7.2.4 SNOOP the exterior exposed welds at penetration X-91A for any evidence of leakage. Indicate results in the remarks section of Attachment D.

[signature] / 10-7-90 CONFIRMED — NA / ____ RECONFIRMED

7.2.5 Increase pressure to 61-63 psig and hold for 10 minutes to support ASME required testing.

PERFORMED PER CWO-C-03747 — N/A / ____ CONFIRMED — NA / ____ RECONFIRMED

[signature] 10/12/90

7.2.6 Depressurize the test volume by venting and removing the LRM and slowly opening valves 157237 and 157243.

[signature] / 10-7-90 CONFIRMED — NA / ____ RECONFIRMED

7.2.7 Remove all test equipment from the test area.

[signature] / 10-7-90 CONFIRMED — NA / ____ RECONFIRMED

7.3 X-228A LLRT

7.3.1 A 4" Thaxton Test Plug has been installed per Thaxton Operating Instructions with Thaxton safety gag on the inside of penetration X-228A as per Attachment B.

RP / 10/11/90 CONFIRMED — NA / ____ RECONFIRMED

7.3.2 Valve 157249 is closed.

SS / 10/11/90 CONFIRMED — NA / ____ RECONFIRMED

7.3.3 Install the LRM to the test port on the 4" Thaxton Plug.

RP / 10/11/90 CONFIRMED — NA / ____ RECONFIRMED

7.3.4 A personnel exclusion area has been established at penetration X-228A.

RP 10/10/90 / _____ NA / _____
CONFIRMED RECONFIRMED

7.3.5 Maintenance to perform LLRT No. 3 in accordance with PE-000-002 and Attachment E, specifying LRM scale used on Attachment E.

S.S. / 10/11/90 NA / _____
CONFIRMED RECONFIRMED

7.3.6 SNOOP the exterior exposed welds at penetration X-228A for any evidence of leakage. Indicate results in the remarks section of Attachment E.

S.S. / 10/11/90 NA / _____
CONFIRMED RECONFIRMED

7.3.7 Increase pressure to 61-63 psig and hold for 10 minutes to support ASME required testing.

PERFORMED PER CWO-C-03747
[illegible] 10/17/90 N/A NA N/A
CONFIRMED RECONFIRMED

7.3.8 Depressurize the test volume by venting and removing the LRM and <u>slowly</u> opening valve 157249.

S.S. / 10/11/90 NA / _____
CONFIRMED RECONFIRMED

7.3.9 Remove the 4" test plug installed per step 7.3.1.

RP / 10/11/90 NA / _____
CONFIRMED RECONFIRMED

7.3.10 Remove all test equipment from the test area.

RP / 10/11/90 NA / _____
CONFIRMED RECONFIRMED

7.4 X-220A LLRT

7.4.1 INSTALL a 1" Thaxton Test Plug per Thaxton Operating Instructions with Thaxton safety gag on the inside of penetration X-220A as per Attachment B. (MAINTENANCE)

[signature] / 10-8-90 / NA / _____
CONFIRMED RECONFIRMED

7.4.2 Valve 157255 is CLOSED.

[signature] / 10-8-90 / NA / _____
CONFIRMED RECONFIRMED

7.4.3 INSTALL the LRM to the test port on the 1" Thaxton Test Plug.

[signature] / 10-8-90 / NA / _____
CONFIRMED RECONFIRMED

7.4.4 A personnel exclusion area has been established at penetration X-220A.

[signature] / 10-8-90 / NA / _____
CONFIRMED RECONFIRMED

7.4.5 Maintenance to perform LLRT No. 4 in accordance with PE-000-002 and Attachment F, specifying LRM SCALE used on Attachment F.

[signature] / 10-8-90 / NA / _____
CONFIRMED RECONFIRMED

7.4.6 SNOOP the exterior exposed welds at penetration X-220A for any evidence of leakage. Indicate results in the remarks section of Attachment F.

[signature] / 10-8-90 / NA / _____
CONFIRMED RECONFIRMED

7.4.7 Increase pressure to 61-63 psig and hold for 10 minutes to support ASME required testing.

PERFORMED PER CWO C 03747 [signature] 4/12/90 / N/A / N/A
CONFIRMED RECONFIRMED

THRU FICTCK. 10/8/90

7.4.8 Depressurize the test volume by venting ~~and removing the LRM and slowly opening valve 157255.~~ 10/8/90

[signature] / 10-8-90 / NA / _____
CONFIRMED RECONFIRMED

7.4.9 Remove the 1" Test Plug installed per step 7.4.1.

[signature] / 10-8-90 / NA / _____
CONFIRMED RECONFIRMED

7.4.10 Remove all test equipment from the test area.

[signature] / 10-8-90 / NA / _____
CONFIRMED RECONFIRMED

8.0 RESTORATION

8.1 Inform Shift Supervision upon completion of testing.

8.2 Complete Acceptance Criteria per Attachment A.

[signature] / 10/17/90 / N/A / _____
CONFIRMED RECONFIRMED

8.3 All valves associated with DCP 89-3018A are to be positioned per the following:

CL-173-0012 Rev 9 / [signature] / 10/17/90 / _____ / _____
CONTROLLING DOCUMENT CONFIRMED RECONFIRMED

9.0 ACCEPTANCE CRITERIA

All Acceptance Criteria is contained on Attachment A.

10.0 REVIEW

10.1 The results of this step as indicated per Attachment A is acceptable.

[signature] Cynthia Smith / 10/17/90 / _____ / _____
GROUP SUPERVISOR GROUP SUPERVISOR

11.0 RECORDS

11.1 This procedure shall be forwarded to PENS Group Supervisor who will initiate the review process, in accordance with AD-QA-422.

11.2 Upon completion of the review process, the completed record shall be stored by the DCC according to surveillance procedure number.

11.3 The results of this procedure shall be submitted to the NRC pursuant to 10CFR50.4.

LLRT DATA FORM

PEN. NO.	PEN. DESCRIPTION
X-5 X-91A X-228A X-220A	CONTAINMENT ATMOSPHERE CONTROL AND SAMPLING
SYS. NO.	**SYS. TITLE**
159	CONTAINMENT AND SUPPRESSION
NO. OF LLRTS	**PNEU./HYDR. TEST**
4	PNEUMATIC
REFERENCES	**LEAKAGE ASSIGNMENT**
DCP 89-3108A	TOTAL OF TEST 1,2,3,4 AND PREVIOUS ILRT RESULTS

ATTACHED LLRTs TEST NO.	FSAR BOUNDARY TESTED
1	X-5
2	X-91A
3	X-228A
4	X-220A

LEAKAGE ERROR ANALYSIS: To determine the leakage error using the Volumetrics Leak Rate Monitor, calculate the error based on instrument accuracy and scale being used.

Scale (SCCM)	Instrument Accuracy	Error Band (SCCM)
20 - 200	8%	±16
200 - 2,000	8%	±160
2,000 - 20,000	8%	±1,600
12,000 - 60,000	8%	±4,800
19,000 - 150,000	8%	±12,000

LLRT DATA FORM

(1) Determine the leak rate to be assigned to this test from total of the Flow Data Sheets and record.

347.1 SCCM — LEAK RATE

N/A SCCM — LEAK RATE

(2) Review the latest performance of the Integrated Leak Rate Test. Use the last leak rate assigned to the test as the "OLD LEAK RATE" and record.

208,547 SCCM — OLD LEAK RATE

N/A SCCM — OLD LEAK RATE

(3) Calculate the "NEW ILRT TOTAL":

(1) + (2) = (New Total)

208,894.1 SCCM — NEW LEAK RATE

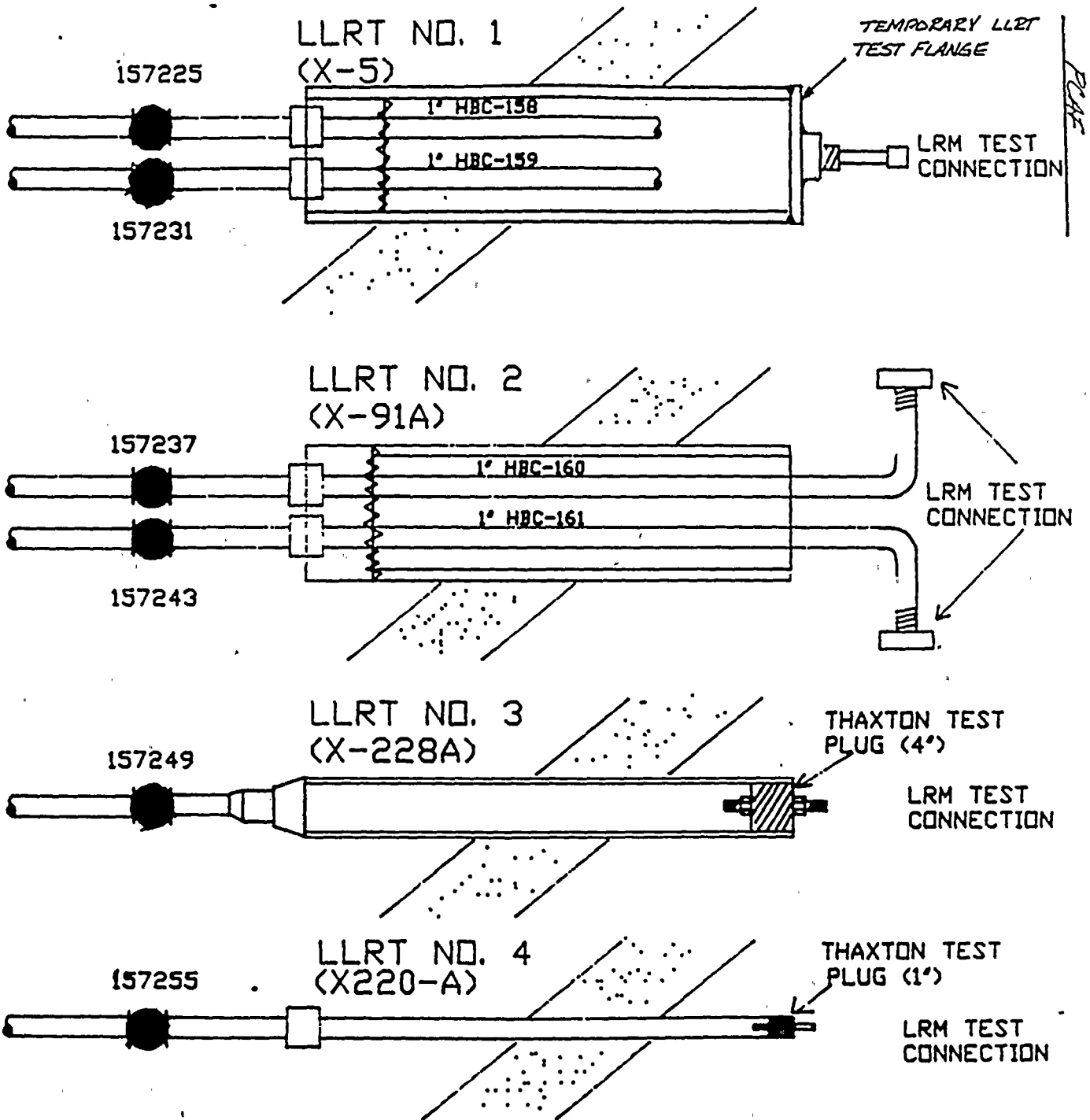
N/A SCCM — NEW LEAK RATE

(4) Compare the "NEW TOTAL" to the Acceptance Criteria. Confirm that the "NEW TOTAL" does not exceed the "ACCEPTANCE CRITERIA".

ACCEPTANCE CRITERIA

.75%/day = 238,430 SCCM
May, 1989 ILRT Data = .656%/day = 208,547 SCCM
Allowable Leakage = 29,882 SCCM

LLRT NO. 1,2,3,4 TEST SKETCH



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LLRT NO. 1 (X-5) FLOW DATA SHEET

Test Connection	Barrier Tested	Test Pressure
8" Test ~~Plug~~ Flange at Pen. X-5	(X-5)	45.5 psig

PCAF

TIME	PRESSURE	MEASURED LEAKAGE RATE	INLET/TEST VOL TEMPERATURE	IMPOSED LEAKAGE RATE
0 min.	46.0	62 SCCM	88°/90°	53.4 SCCM
10 min.	46.0	64.1 SCCM	88°/90°	53.4 SCCM
20 min.	46.0	63.7 SCCM	88°/90°	53.4 SCCM
30 min.	46.0	59.9 SCCM	88°/90°	53.4 SCCM
40 min.			/	
50 min.			/	
Instr. No.	MM ~~271~~ 233	MM ~~271~~ 233	MM ~~271~~ 233 / MM 272B	MM 250 / MM 233

CIRCLE LRM FULL SCALE USED: (200SCCM) 2SLM 20SLM 60SLM 150SLM

AVG. MEASURED LEAKAGE - AVG. IMPOSED LEAKAGE = LEAK RATE

62.4 - 53.4 = 9.0 ± 16 SCCM

PERFORMED BY: [signature] 10/12/90 DATE FOREMAN: [signature] 10/12/90 DATE

STA VERIFICATION: N/A [signature] 10/17/90 DATE

REMARKS: NO Leaks at welds per R Pam MJB 10/12/90

LLRT NO. 2 (X-91A) FLOW DATA SHEET

Test Connection	Barrier Tested	Test Pressure
Threaded End at Pen. X-91A	HBC160 (X-91A)	45.5

TIME	PRESSURE	MEASURED LEAKAGE RATE	INLET/TEST VOL TEMPERATURE	IMPOSED LEAKAGE RATE
0 min.	46.2 psig	182.3 sccm	82°F / 88°F	
10 min.	46.2 psig	187.5 sccm	82°F / 88°F	
20 min.	46.2 psig	180.1 sccm	82°F / 88°F	
30 min.	46.2 psig	185.7 sccm	82°F / 88°F	
40 min.			/	
50 min.			/	
Instr. No.	mm234	mm234	mm234	mm278 / mm272B

CIRCLE LRM FULL SCALE USED: (200SCCM) 2SLM 20SLM 60SLM 150SLM

AVG. MEASURED LEAKAGE - AVG. IMPOSED LEAKAGE = LEAK RATE

183.9 - 0 = 183.9 ± 16 sccm

PERFORMED BY: James Dawson / 10-7-90 DATE FOREMAN: M. J. Barlow / 10/12/90 DATE

STA VERIFICATION: [illegible] / 10/17/90 DATE

REMARKS: leak on through 37 LLV - NO LEAKS AT VCCBS [illegible]

LLRT NO. 2 (X-91A) FLOW DATA SHEET

Test Connection	Barrier Tested	Test Pressure
Threaded End at Pen. X-91A	HBC-161 (X-91A)	45.5

TIME	PRESSURE	MEASURED LEAKAGE RATE	INLET/TEST VOL TEMPERATURE	IMPOSED LEAKAGE RATE
0 min.	46.3 psig	51.8 sccm	82°F / 80°F	49.9 sccm
10 min.	46.3 psig	56.3 sccm	82°F / 80°F	49.9 sccm
20 min.	46.3 psig	54.2 sccm	82°F / 80°F	49.9 sccm
30 min.	46.3 psig	54.6 sccm	82°F / 80°F	49.9 sccm
40 min.			/	
50 min.			/	
Instr. No.	MM 233	MM 233	MM 2331	MM 244 / MM 1288 / MM 223

CIRCLE LRM FULL SCALE USED: (200SCCM) 2SLM 20SLM 60SLM 150SLM

AVG. MEASURED LEAKAGE - AVG. IMPOSED LEAKAGE = LEAK RATE

54.2 - 49.9 = 4.3 ± 16 sccm

PERFORMED BY: [signature] 10-7-90 DATE FOREMAN: M. J. Boshoe 10/12/90 DATE

STA VERIFICATION: N/A [signature] 10/17/90 DATE

REMARKS: NO LEAK AT HELIOS [signature] 10/17/90

LLRT NO. 3 (X-228A) FLOW DATA SHEET

Test Connection	Barrier Tested	Test Pressure
Test Plug at Pen. X-228A	(X-228A)	45.5

TIME	PRESSURE	MEASURED LEAKAGE RATE	INLET/TEST VOL TEMPERATURE	IMPOSED LEAKAGE RATE
0 min.	46.0 psig	148.5 sccm	84°F, 74°F	n/a
10 min.	46.0 psig	149.2 sccm	84°F, 74°F	
20 min.	46.0 psig	147.8 sccm	84°F, 74°F	
30 min.	46.0 psig	149.1 sccm	84°F, 74°F	
40 min.				
50 min.				
Instr. No.	MM138A	MM138A	MM282	MM298 / MM282

CIRCLE LRM FULL SCALE USED: 200SCCM 2SLM 20SLM 60SLM 150SLM

AVG. MEASURED LEAKAGE - AVG. IMPOSED LEAKAGE = LEAK RATE

148.7 - — = 148.7 ± 16 sccm

PERFORMED BY: S. D. [illegible] 10/11/90 DATE FOREMAN: M. J. Boylard 10/12/90 DATE

STA VERIFICATION: N/A [illegible] 10/17/90 DATE

REMARKS: Per 7.3.6 snooped all ext. welds absolutely no [illegible] S.

LLRT NO. 4 (X-220A) FLOW DATA SHEET

Test Connection	Barrier Tested	Test Pressure
Test Plug at Pen. X-220A 670	(X-220A)	45.5

TIME	PRESSURE	MEASURED LEAKAGE RATE	INLET/TEST VOL TEMPERATURE	IMPOSED LEAKAGE RATE
0 min.	46.4 Psig	50.9 sccm	84°F / 80°F	50.4 sccm
10 min.	46.4 Psig	52.6 sccm	84°F / 80°F	50.4 sccm
20 min.	46.4 Psig	51.3 sccm	84°F / 80°F	50.4 sccm
30 min.	46.4 Psig	51.6 sccm	84°F / 80°F	50.4 sccm
40 min.			/	
50 min.			/	
Instr. No.	mm 237	mm 237A	mm 237A1	mm 282 mm 108C mm 237A

CIRCLE LRM FULL SCALE USED: 200SCCM 2SLM 20SLM 60SLM 150SLM

AVG. MEASURED LEAKAGE - AVG. IMPOSED LEAKAGE = LEAK RATE

51.6 - 50.4 = 1.2 ± 16 sccm

PERFORMED BY: [signature] 10-6-90 DATE FOREMAN: [signature] 10/12/90 DATE

STA VERIFICATION: N/A [signature] 10/17/90 DATE

REMARKS: No LEAKS AT WELDS [signature] 10/7/90.