APPENDIX F

RESULTS OF THE LEAK REDUCTION PROGRAM FOR LIQUID AND GAS SYSTEMS

In accordance with NUREG 0578. Please find attached initial leakage data for Sequoyah Unit 1. Also attached are leakage results following repair after the initial tests and second quarter results. Note that leakage results are not tabulated for the reactor coolant sampling system. This system has only recently been available for testing. Testing for this system is expected to be complete shortly.

LIQUID SYSTEM LEAK TEST RESULTS

SQNP
SI-632.0 - Unit 1 & 2
Data Package Cover Sheet
Page 1 of 1
Rev. 0

Unit 1

Performed By Jerry W. Church Date 7-1-80

List of data sheets attached:

Instruction No.	Data Sheet No.	Pages
SI-632.0	1	1

Reason for test:

- X Required by schedule
- ____ Maintenance complete on _____ (instruction _____)
- ____ Another system (_____) inoperable
- ____ Plant condition (explain) _____
- ____ Other (explain) _____

Review of Test Results

Mechanical Engineer/Associate Frank M. Walker Date 7-1-80

Review and Approval of Test Results

Results Mechanical Engineer John A. McKibben Date 7-1-80

QA Review of Test Results

QA Staff _____ Date _____

Remarks: _____

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Date 7-1-80 Unit 1

SI No.	System Date	Systems External Leakage Quarter 1	Quarter 2	Quarter 3	Quarter 4
632.1	CS	(1) .000055	(2) See Note .00011		
	Date of test	1/21/80	5/16/80		
632.2	SIS	(1) .000288	0		
	Date of test	1/22 & 2/1/80	5/14/80		
632.3	RHR	(3) .000016 GPM	(4) (6)		
	Date of test	1-24-1980	5/13/80		
632.4	CVCS	(2) .000058	0		
	Date of test	3-21-80	5/22/80		
632.5	RC Sample	(5)	(5)		
	Date of test				
Sum of systems leakage for each quarter		0.000417	0.00011		

NOTE: The external leakages are in GPM. Each quarter is refering to a 92-day time period.

Remarks: (1) MR 50201 was completed and retest preformed and no leakage found 3/13/80.

(2) MR's 50233, 50225, 50227 was completed 3/1/80. Retest 5/14/80

(3) MR 50212 was completed 2/14/80. Retest 5/13/80

(4) MR 50243 was completed 3/26/80.

(5) Reactor pressure was not high enough for test to be preformed.

(6) Leakage was unestimatable and flexitic gasket is to be replaced per MR 08196O.

(7) MR's 42998, 42999, 43000 was completed and retest on 5/11/80

(8) Retest of [illegible] System after completion of MR's.

(9) MR Completed & retest complete.

GAS SYSTEM LEAK TEST RESULTS

6/13/80

7:00a Pressure reached 91 psi at ≈ 1:30 pm and the operators isolated the system. Pressure currently 87 psig. We will start filling.

9:00a Pressure stabilized at 91 psig. We placed the test panel on line.

11:30a Snoop tests have been completed. O-PCV-77-116 and O-PCV-77-117 were found to have bonnet leaks. They must be depressurized to repair. Our internal leak rate plus these two valves totalled 118 scfh.

1:30p After discussion with NRC, Mike Hatley said the valves could be repaired on an MR and the retested for leak tightness. We will complete the SI and attach the MR's.

5:00p All TACF's have been cleared except for O-77-859B which operations wishes to leave as is.

GOIP
81-656
DATA PACKAGE COVER SHEET
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REV. 0

WASTE GAS SYSTEM GROSS LEAKAGE TEST

UNIT 1

Performed by L B Knehm Date 6/13/80
Shift Engineer

Were technical specification criteria satisfied? N/A ____ Yes ____ No. If criteria were not satisfied, notify the shift engineer who completes the following:

Was a limiting condition for operation violated? ____ Yes (explain in remarks) X No (explain in remarks).
Verified by _____ Date _____
Shift Engineer

Reason for test:

____ Required by schedule

____ Maintenance complete on _____ (Instruction _____)

____ Another system (_____) inoperable

____ Plant condition (explain) _____

__X__ Other (explain) Special Test For NRC

Review of Test Results

Mechanical Engineer L B Knehm Date 6/13/80

Review and Approval of Test Results

Results Mechanical Engineer _____ Date _____

QA Review of Test Results

QA Staff _____ Date _____

Remarks _____

_____

_____

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A

Appendix

If a rotameter is used record the following:

Rotameter I.D. No. 3-MT.5014
Tube Size: 4 inches
Float Material: TA

Pressure at Float: 91 psig
Temperature at Float: 72 °F
Float Reading: 15.6
Converted Flow (From Curve) 44.07 SCFH

Calculate the gross leakage from the data recorded using Equation 1, and record this value below.

Note: Equation 1

$$SCFH = CFH \sqrt{\frac{P_R}{P_A} \times \frac{T_A}{T_R}}$$

Where: P_R = Pressure at rotameter float, psia

T_R = Temperature at rotameter float, °R

CFH = Float indicated by rotameter tubes, CFH

SCFH = Flow at standard conditions of 14.696 psia and 70°F

Corrected standard gross leak rate: 118 SCFH

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Appendix D

If a Mass Flowmeter is used record the following:

Flowmeter I.D. No.: _____

Test Pressure: _____ psig
Flow Range: _____ sccm
Flow: _____ sccm

Calculate the gross leakage from the data recorded using Equation 2, and record this value below.

Note: Equation 2

$$SCFH = \frac{SCCM}{28315.85} \times 60$$

Where: SCCM = Indicated flow from mass flowmeter, standard cubic centimeters per minute

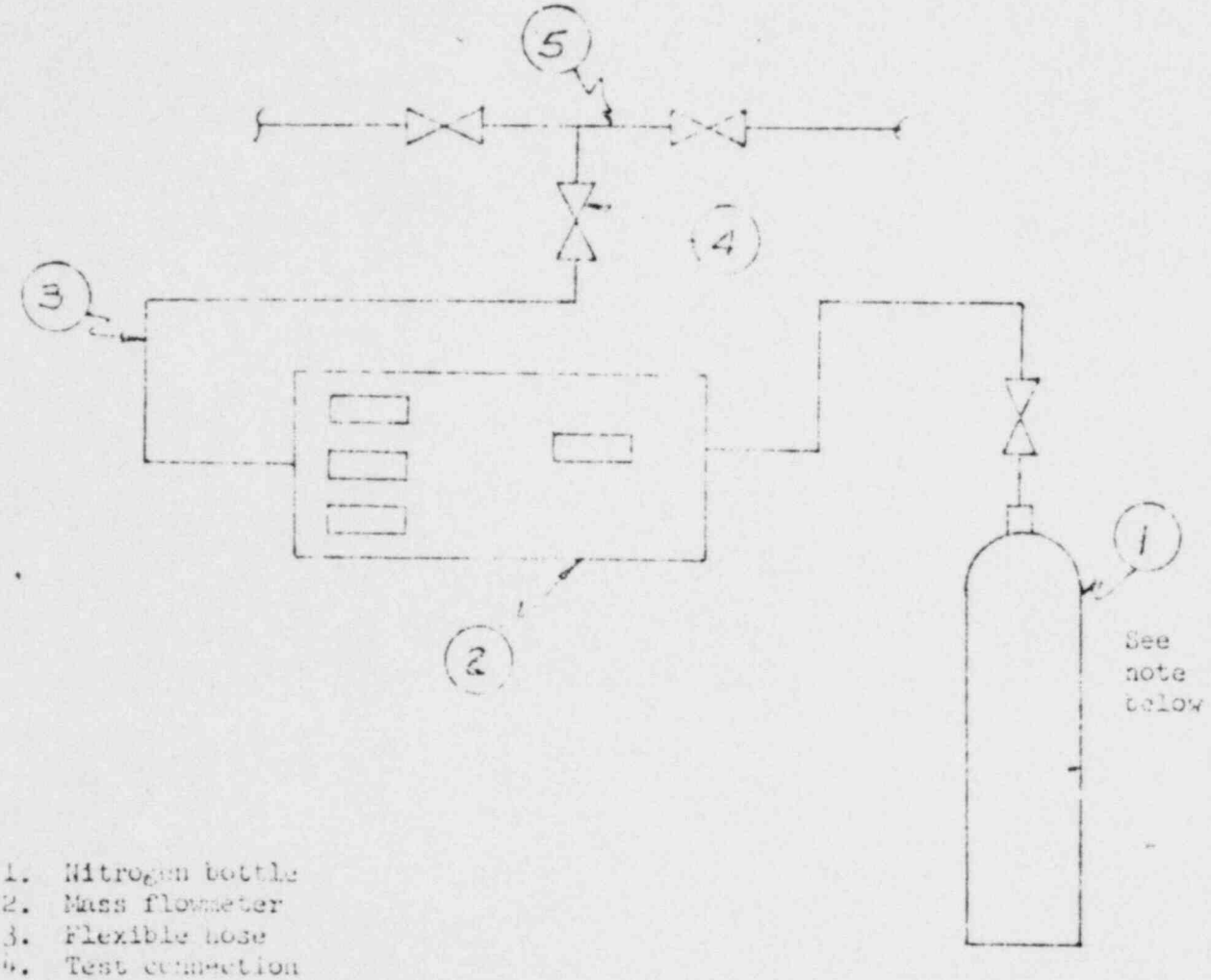
SCFH = Flow at standard conditions of 14.696 psia and 70°F

Corrected standard gross leakage rate: _____ SCFH

Appendix C

Figure 1

Mass Flowmeter Test Method



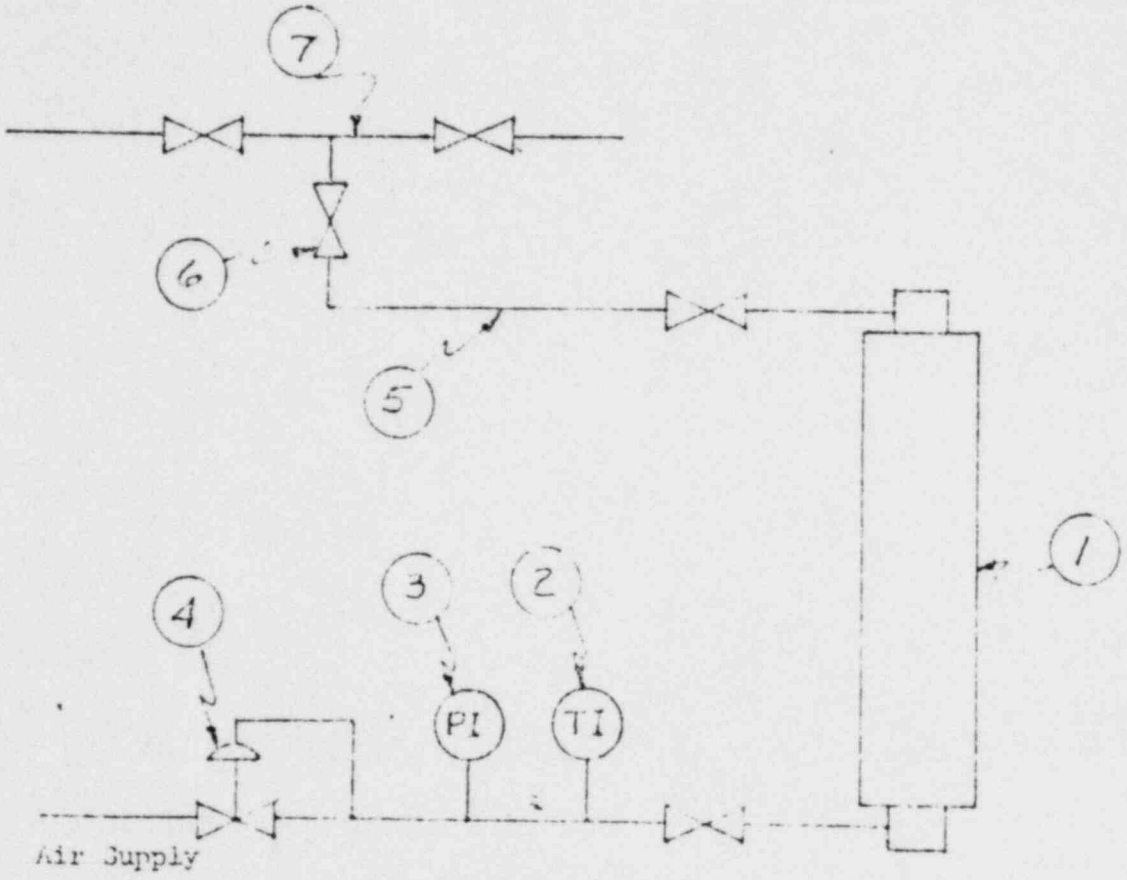
1. Nitrogen bottle
2. Mass flowmeter
3. Flexible hose
4. Test connection
5. Testable piping volume

Note: Control air system may be used as an alternate source to pressurize testable piping volume.

Appendix C

Figure 2

Rotameter Test Method



1. Calibrated rotameter
2. Calibrated temperature indicator
3. Calibrated pressure indicator
4. Pressure regulator
5. Flexible hose
6. Test connection
7. Testable piping volume

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