

LEAKAGE REDUCTION AND PREVENTIVE  
MAINTENANCE PROGRAM TEST OF POST-ACCIDENT  
CONTAINMENT ATMOSPHERIC SAMPLING SYSTEM  
(REFUELING)  
UNIT 2

Date \_\_\_\_\_  
DSS \_\_\_\_\_

RECORD

PROCEDURE VERIFIED CURRENT AND CHECKED FOR TEMPORARY CHANGES. IF FIELD  
COPIES REQUIRED, USE PBF-0026; LAW NP 1.2.4 AND DO NOT COMPLETE THIS BLOCK

BY: \_\_\_\_\_ DATE: \_\_\_\_\_

1.0 PURPOSE

The purpose of this test is to detect and quantify leakage from the post-accident containment atmospheric sampling system as required by Technical Specifications Table 15.4.1-2 (22) and NUREG-0578.

2.0 REFERENCES

- 2.1 P&ID M-2215, Sheet 2, RE-211&212
- 2.2 OI-58, "Leak Testing of Containment Isolation Valves - Unit 1 and 2 General Instructions and Information."
- 2.3 EDS Nuclear, "Post-Accident Containment Atmospheric Sampling System Leakage Test," dated 12-80
- 2.4 EDS Nuclear Report, "Leakage Reduction and Preventive Maintenance Program at PBNP," dated 07-24-80

3.0 PRECAUTIONS AND LIMITATIONS

- 3.1 Gases leaking from various components of the post-accident containment atmospheric sampling system may be radioactive and appropriate health physics practices should be observed.
- 3.2 Do not pressurize the system to a pressure greater than required for the test.
- 3.3 Figure 1 is an informational drawing only.

4.0 INITIAL CONDITIONS

- 4.1 2RE-211&212 may be taken OOS for up to 4 hours to perform this test.
- 4.2 An RWP is available, if required.

INITIALS

LEAKAGE REDUCTION AND PREVENTIVE  
MAINTENANCE PROGRAM TEST OF POST-ACCIDENT  
CONTAINMENT ATMOSPHERIC SAMPLING SYSTEM  
(REFUELING)  
UNIT 2

INITIALS

4.3 Staging and pretest of Volumetrics test rig.

4.3.1 Station the Volumetrics test rig in an area not subject to draft or cold weather.

4.3.2 Route P-tubing from the test rig to the 2RM-211/212 cubicle at valve 2RM-3200Y but do not connect to 2RM-3200Y.

4.3.3 Install a Swageloc cap at the extreme end of the tubing.

4.3.4 Adjust the pressure regulator of the test rig for a supply pressure of 15 psig and pressurize the test rig and P-tubing.

4.3.5 When a stable test system leak rate is achieved:

- a. Correct any substantial leak paths in the test system. The leakage at the end fitting of the P-tubing should be zero.
- b. Record the as-left baseline test system leak rate on the test data sheet for the 15 psig test.

4.3.6 Adjust Volumetrics test pressure for  $4.0^{+5}_{-0}$  psig in preparation for the low pressure test.

4.4 **Permission to Perform Test**

The conditions required by this test are consistent with required plant conditions including equipment operability. Permission is granted to perform this test.

DSS \_\_\_\_\_ Time \_\_\_\_\_ Date \_\_\_\_\_

5.0 PROCEDURE

5.1 Place the control switch for 2P-707B, containment forced air blower, to "PULLOUT."

LEAKAGE REDUCTION AND PREVENTIVE  
MAINTENANCE PROGRAM TEST OF POST-ACCIDENT  
CONTAINMENT ATMOSPHERIC SAMPLING SYSTEM  
(REFUELING)  
UNIT 2

INITIALS

**NOTE:** *If unit is at power, LCO entry point.*

- 5.2 Secure 2P-707A sample pump. \_\_\_\_\_
- 5.3 Position the "MODE SELECTOR" on 2C-20 for the containment air  
sampling system to the "CONTAINMENT" position. \_\_\_\_\_
- 5.4 Align the system per Attachment A. \_\_\_\_\_
- 5.5 Connect the Volumetrics test rig to 2RM-3200Y, septum SA purge test  
connection. \_\_\_\_\_

**\*CAUTION\*** THE TEST PRESSURE OF 65 PSIG PER OI-58 DOES  
NOT APPLY TO THIS TEST. DO NOT EXCEED 5 PSIG  
TEST PRESSURE, THE DESIGN PRESSURE OF THE  
MYLAR WINDOW OF 2RE-211&212.

- 5.6 Open 2RM-3200Y and raise the system pressure to  $4.0^{+5}_{-0}$  psig per OI-58. \_\_\_\_\_
- 5.7 When a stable pressure and leak rate condition is achieved, record data on  
the test data sheet. \_\_\_\_\_
- 5.8 When the 4 psig test is complete, position the "MODE SELECTOR" on  
2C-20 to the "SEPTUM" position. \_\_\_\_\_
- 5.9 Shut the following valves:  
  
2RM-1, 2P-707A bypass regulator inlet isolation \_\_\_\_\_  
  
2RM-3200K, 2RE-211&212 inlet manual isolation \_\_\_\_\_
- 5.10 Slowly unscrew the glass bowl of the 2RE-211/212 bypass line filter to  
vent 2RE-211/212 to atmosphere. When 2RE-211/212 is depressurized,  
then remove the bowl to protect 2RE-211/212 from an overpressure  
condition in the subsequent test. \_\_\_\_\_

LEAKAGE REDUCTION AND PREVENTIVE  
MAINTENANCE PROGRAM TEST OF POST-ACCIDENT  
CONTAINMENT ATMOSPHERIC SAMPLING SYSTEM  
(REFUELING)  
UNIT 2

INITIALS

- 5.11 Using the Volumetrics test rig, raise system pressure to  $15^{+1}_{-0}$  psig per  
OI-58. \_\_\_\_\_
- 5.12 When a stable pressure and leak rate condition is achieved:
- 5.12.1 Check with Snoop and correct any leakage to atmosphere at  
mechanical joints, fittings, valve bonnet and packing gland, etc.  
within the test volume. \_\_\_\_\_
- 5.12.2 Record data on the test data sheet. \_\_\_\_\_
- 5.13 If the corrected leak rate, as determined by subtracting the baseline  
leakage of Step 4.3.5.b, is  $>10$  sccm, then locate the source of the leakage  
by systematically isolating portions of the system using  
valves 2RM-3200W, 3200Z, 3200J, 3200L, 3200JJ and 3200LL. Record  
trouble shooting results in the Remarks section of the test data sheet. \_\_\_\_\_
- 5.14 When the test is complete, then shut 2RM-3200Y and disconnect the  
Volumetrics test rig.
- 5.15 Verify open, 2RM-3200J, JJ, LL, L, W and Z, then depressurize the test  
volume by opening 2RM-3200A. \_\_\_\_\_
- 5.16 When the system is depressurized:
- 5.16.1 Screw on firmly the glass bowl of the 2RE-211/212 bypass line  
filter assembly. \_\_\_\_\_
- 5.16.2 Shut 2RM-3200JJ and 3200LL. \_\_\_\_\_
- 5.16.3 Open 2RM-1, 3200K, 3200EE and 3200FF. \_\_\_\_\_
- 5.16.4 Open 2RM-3200B and 3200C. \_\_\_\_\_

LEAKAGE REDUCTION AND PREVENTIVE  
MAINTENANCE PROGRAM TEST OF POST-ACCIDENT  
CONTAINMENT ATMOSPHERIC SAMPLING SYSTEM  
(REFUELING)  
UNIT 2

INITIALS

5.16.5 Lock open the following:

2RM-3200J Lock No. \_\_\_\_\_

/

2RM-3200L Lock No. \_\_\_\_\_

/

5.16.6 Perform an independent operator verification of the system  
valve alignment per CL-8A.

5.17 Return the system to the mode of operation determined by the DSS.

**NOTE:** *If unit is at power, LCO exit point.*

6.0 ACCEPTANCE CRITERION

The leakage criteria of the Leakage Reduction and Preventive Maintenance Program are used to evaluate the leakage from the post-accident atmospheric sampling system. The check against Criterion 1 or Criterion 2 does not apply for this system as it is not located in the auxiliary building. The total post-accident system leakage from all areas of the plant is limited by Criterion 3. Thus, the acceptance of these test results require their evaluation together with the results of the other post-accident system leakage tests.

LEAKAGE REDUCTION AND PREVENTIVE  
MAINTENANCE PROGRAM TEST OF POST-ACCIDENT  
CONTAINMENT ATMOSPHERIC SAMPLING SYSTEM  
(REFUELING)  
UNIT 2

INITIALS

7.0 ANALYSIS

**TO BE COMPLETED BY THE OPERATIONS MANAGER OR HIS  
REPRESENTATIVE.**

7.1 Comparison with allowable ranges of test values and analysis of  
deviations complete. \_\_\_\_\_

7.2 Any requirements for corrective action?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, give details in the remarks section and MWR No. \_\_\_\_\_.

7.3 Data analyzed. By \_\_\_\_\_

Date \_\_\_\_\_

Remarks:

LEAKAGE REDUCTION AND PREVENTIVE  
MAINTENANCE PROGRAM TEST OF POST-ACCIDENT  
CONTAINMENT ATMOSPHERIC SAMPLING SYSTEM  
(REFUELING)  
UNIT 2

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TEST DATA SHEET

1.0 LOW PRESSURE TEST

**NOTE:** *This leak test data is not compensated for test apparatus leakage and is informational only.*

Test pressure \_\_\_\_\_ psig  
Leak rate \_\_\_\_\_ sccm  
Test Inst. ID \_\_\_\_\_  
Test Inst. Range \_\_\_\_\_ sccm  
Time/Date \_\_\_\_\_ / \_\_\_\_\_

2.0 HIGH PRESSURE TEST, SEPTUM SYSTEM ONLY

2.1 Test apparatus baseline leak rate (Step 4.3.5.b) = \_\_\_\_\_ sccm

2.2 Test pressure \_\_\_\_\_ psig  
Leak rate (total) \_\_\_\_\_ sccm  
Test Inst. ID \_\_\_\_\_  
Test Inst. Range \_\_\_\_\_ sccm  
Time/Date \_\_\_\_\_ / \_\_\_\_\_

2.3 Compensated system leakage = total leak rate (2.2 above) minus test apparatus baseline leak rate (2.1 above).

Compensated system leakage = \_\_\_\_\_ - \_\_\_\_\_ = \_\_\_\_\_ sccm

Remarks:

LEAKAGE REDUCTION AND PREVENTIVE  
MAINTENANCE PROGRAM TEST OF POST-ACCIDENT  
CONTAINMENT ATMOSPHERIC SAMPLING SYSTEM  
(REFUELING)  
UNIT 2

ATTACHMENT A

<u>Valve No.</u>	<u>Description</u>	<u>Position</u>	<u>Initials</u>
2RM-3200A	Return to containment .....	S	
2RM-3200B	Sample from containment.....	S	
2RM-3200C	Sample from containment.....	S	
2RM-3200EE	Purge exhaust sample, manual isolation.....	S	
2RM-3200FF	Facade sample manual isolation.....	S	
2RM-3200J	Sample septum inlet.....	O	
2RM-3200K	RE-211/212 isolation.....	O	
2RM-3200L	Sample septum outlet.....	O	
2RM-3200N	Forced vent blower inlet.....	S	
2RM-3200Q	Natural vent isolation.....	S	
2RM-3200R	Supply test connection.....	S & Capped	
2RM-3200V	Return test connection .....	S & Capped	
2RM-3200W	Purge exhaust stack inlet .....	O	
2RM-3200Y	Service air purge .....	S	
2RM-3200Z	Manual return to containment.....	O	
2RM-3200JJ	Sample septum inlet series isolation.....	O	
2RM-3200LL	Sample septum outlet series isolation.....	O	

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MAINTENANCE PROGRAM TEST OF POST-ACCIDENT  
CONTAINMENT ATMOSPHERIC SAMPLING SYSTEM  
(REFUELING)  
UNIT 2

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