Document Section
INFORMATION ONL
C. R. Nuclear

PERFORMANCE TESTING PROCEDURE

PT-109

FLORIDA POWER CORPORATION

CRYSTAL RIVER UNIT 3

RC BLEED LINE LEAK RATE TEST

REVIEWED BY: Plant Review Committee

Paul F. McGee

Date 11/1/79

Meeting No. 79-43

APPROVED BY: Nuclear Plant Manager

Guy R. Beatty Jr

Date 11/2/79

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1.0 PURPOSE

1.1 The purpose of this test is to measure the actual leak rate of the reactor coolant (RC) bleed line between MUV-112 and the RC bleed tanks.

2.0 REFERENCES AND ENCLOSURES

2.1 REFERENCES

2.1.1 OP-407, Liquid Waste Disposal System

2.1.2 FPC Dwg. FD-302-681

2.1.3 FPC Dwg. FD-302-661

2.1.4 MP-137, System Hydrostatic Pressure Testing

2.2 ENCLOSURES

Enclosure 1 Data Sheet I

3.0 TIME REQUIRED

3.1 Approximately 6 hrs. from start of test to completion, including:

a. Assembly of Pressure Test Rig (PTR)

b. System Testing

c. Calculations

d. Disassembly of PTR

4.0 MANPOWER

4.1 Plant Auxiliary Operator (1)

4.2 Level II Visual Inspector (1)

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4.3 Maintenance Mechanics (2)

4.4 Test Engineer (1)

5.0 SPECIAL TEST EQUIPMENT

5.1 Means of timing leak collection (stopwatch).

5.2 Containers suitable for leakage collection.

5.3 PTR similar to that described in MP-137, System Hydrostatic Pressure Testing, Figure 1.

5.4 Graduated container suitable for measuring total collected leakage.

6.0 LIMITS AND PRECAUTIONS

6.1 All work will be performed under a Radiation Work Permit (RWP).

6.2 If leakage exists, the piping must be maintained under test pressure for a minimum of 1 hr. for leakage collection.

6.3 The PTR water supply shall be of RC makeup quality.

6.4 When the system is under pressure, the PTR must be manned at all times and pressure monitored.

6.5 If at any time the leak rate exceeds the acceptance criteria, the necessary repairs must be made and test redone.

6.6 If unanticipated bleed operations become necessary during the performance of this test, terminate the test and restore the systems to normal operation.

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6.7 There are no Technical Specifications applicable to this system.

7.0 REQUIRED PLANT STATUS AND PREREQUISITE CONDITIONS

7.1 Plant should be in Mode 3, 4, 5, or 6.

7.2 Bleed operations are not anticipated for the duration of the test.

7.3 An appropriate RWP has been issued and approved.

8.0 TEST METHOD

		Initials
8.1	Verify all required plant status and prerequisite conditions as set forth by Section 7.0 of this procedure have been completed.	_____
8.2	Verify normal system valve lineup per OP-407, Liquid Waste Disposal System.	_____
8.3	Notify the Shift Supervisor that test is to begin.	_____
8.4	Connect PTR to test connection (to be installed) between WDV-6 and WDV-18, 20, or 22.	_____
8.5	Open WDV-6.	_____
8.6	Position MUV-112 (three-way valve) for feed to makeup and purification filters 3A and/or 3B.	_____
8.7	Verify that WDV-7 and WDV-8 are closed.	_____
8.8	Verify that WDV-18, 20, and 22 are closed.	_____
8.9	Pressurize PTR and assure zero leakage.	_____
8.10	Notify Control Center that system is about to be pressurized.	_____

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8.11 Slowly open isolation valve on PTR. Verify that system pressure increases to test pressure value (150 psig) +5%, -0%. _____

8.12 Allow 15 min. for system stabilization. _____

8.13 Initiate inspection of piping and components for evidence of leakage. _____

8.14 If leakage is detected, collect for a period of not less than 1 hr. and record leakage on Data Sheet I of this procedure. _____

NOTE: If inspection of the piping and components disclose no leakage, the test may be terminated and appropriate annotation made on Data Sheet I of this procedure.

8.15 Determine the system leak rate as required by Data Sheet I of this procedure. _____

8.16 Return the system to normal as follows:

8.16.1 Stop the PTR pump. _____

8.16.2 Position MUV-112 for normal operation. _____

8.16.3 Close WDV-6. _____

8.16.4 Assure normal system lineup per OP-407, Liquid Waste Disposal System. _____

8.16.5 Close the PTR isolation valve vent and disconnect the PTR. _____

8.17 Notify Control Center and Shift Supervisor that test is complete and of the results. _____

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9.0 DATA COLLECTION

9.1 Refer to Data Sheet I.

10.0 ACCEPTANCE CRITERIA

10.1 To be determined; low as practical.

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DATA SHEET I

ENCLOSURE 1

LEAK LOCATION	TIME START	TIME STOP	DELTA TIME (1 HR/MIN.)	VOLUME	LEAK RATE*	INITIALS
			TOTAL			

*Leak Rate = $\frac{\text{Volume (gals.)}}{\text{Delta Time (hrs.)}}$ = GPH

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