



ATTACHMENT  
 REFUELING OUTAGE - 1983  
 SUMMARY OF APPENDIX J: TYPE B AND C  
 LEAK RATE TEST RESULTS

PENETRATION NUMBER	DESCRIPTION	AS FOUND CONDITION	AFTER MAINTENANCE
		lbm air/24 hr @ 40 psig	lbm air/24 hr @ 40 psig
3	Safety Injection	3.9	NA
4	Pressurizer Relief Tank Vent	.3	NA
6	Hydrogen Sampling Lines	0	NA
7	Reactor Coolant Pump Seal Water Ret.	.2	NA
9	Hydrogen Sampling Lines	.2	NA
10	Reactor Coolant Letdown	0	NA
11	Liquid Sample Lines	.3	.2 (Note 1)
12A	Valve Stem Leakoffs	2.1	NA
12B	Neutron Shield Tank Sample	0	NA
13	Containment Sump Pump Discharge	260 (Note 2a)	96 (Note 2b)
14/78	Vapor Seal Head Tank Drain/ Pressurizer Relief Tank Drain	13	.1 (Note 3)
15,16 17,18	Steam Generator Blowdown	73.1	NA
20	Pressurizer Relief Tank Nitrogen Supply	1.2 (Note 4)	NA
22	Space Heating Condensate Return	1.2	NA
23A	Containment Leak Detection: Open Bulb System	>.6La	.3 (Note 5)
23B	Containment Leak Detection: Closed Bulb System	.1	NA
23C	Dead Weight Tester	0	NA
23D	Air Monitor Purge	.6	NA
24	Safety Injection Recirculation	.4	NA
28	Component Cooling Water to Reactor Coolant Pump Oil Coolers	.6	NA
29	Component Cooling Water From Reactor Coolant Pump Oil Coolers	.1	NA
30	Containment Space Heating Supply	.1	NA
33	Refueling Cavity Purification	0	NA
34	Component Cooling Water from Reactor Coolant Pump Thermal Barrier	.9	NA
38	Component Cooling Water to Reactor Coolant Pump Thermal Barrier	>.6La	0 (Note 6)
39	Containment Purge Air: Exhaust	0	NA
40	Containment Purge Air: Supply	0	NA
41	Loop Drain Header	1.7	3.0 (Note 7)
50	Fuel Transfer Tube	0	NA
60	Component Cooling Water to Neutron Shield Tank Cooler	>.6La	0 (Note 8)
61	Component Cooling Water from Neutron Shield Tank Cooler	0	NA
62	Service Air to Containment	0	NA
63	Neutron Shield Tank Fill Line	0	NA

PENETRATION NUMBER	DESCRIPTION	AS FOUND CONDITION	AFTER MAINTENANCE
		lbm air/24 hr @ 40 psig	lbm air/24 hr @ 40 psig
64	Air Monitor Sample from Cont.	11.7	NA
65	Air Monitor Sample to Cont.	0	NA
66	Component Cooling Water to Drain Cooler	0	NA
67	Component Cooling Water from Drain Cooler	.1	NA
68	Primary Water to Containment	0	
69	Loop Fill	1.5	NA
70	Instrument Air Supply to Cont.	.1	NA
71	Primary Vent Header	1.6 (Note 4)	NA
80	Auxiliary Containment Spray From Fire System	0	NA
81	Steam Generator Auxiliary Feedwater Supply	.8	NA
A	Personnel Hatch	.2	NA
B	Electrical	14.7	NA
C	Equipment Hatch	4.6	NA
D	Dome Vent Flange (Top)	.1	NA
E	Dome Vent Flange (Side)	.1	NA

SUMMARY

Total Leak Rate - As Found: >.6La

Total Leak Rate - After Maintenance: 220.1 lbm of air/day @ 40 psig

ATTACHMENT

NOTES

- Note 1: Maintenance repacked the Pressurizer Steam Space Sample and Pressurizer Liquid Space Sample Trip Valves. Subsequent retest of valve leak rate was acceptable.
- Note 2a: Reverse direction tested in accordance with relief in Technical Specifications, Amendment 49.
- 2b. It was subsequently determined that both valves were testable in the accident direction. The results of this test was a leak rate of 96 Lbm of air/day @ 40 psig. This leak rate is acceptable.
- Note 3: Procedure leak rate limit exceeded. The isolation valves were disassembled and inspected. The valve seats and disks were found to be in good shape. Further investigation revealed a hole in the internal body of the redundant isolation valve. This valve is a 2 inch Masonielan Globe Valve, Model 38-20721. The valve was replaced. The retest of the penetration was acceptable.
- Note 4: New valves installed during the test period. The as found condition is not applicable.
- Note 5: While performing penetration leak rate testing, these valves could not reach test pressure. The isolation valves are two,  $\frac{1}{2}$  inch solenoid operated trip valves. The evaluation concluded that dirt and scale prevented full closure. The valve internals were cleaned. The retest was satisfactory.
- Note 6: The isolation valve is a 3 inch lift check valve. Dirt was cleaned from the valve internals. The retest was satisfactory. The evaluation concluded that dirt and scale prevented full closure of the valve (See Note 9).
- Note 7: Retest was conducted after the body to bonnet gasket was replaced. No leak rate limits were exceeded.
- Note 8: This penetration is tested by the liquid collection method. Gross leakage was indicated past the valve. The isolation valve is a  $1\frac{1}{2}$  inch angle check valve with spring assist. Dirt was cleaned from the valve internals. The retest was satisfactory. The evaluation concluded that dirt prevented valve closure (see Note 9).
- Note 9: It is felt that the presence of foreign particles in the component cooling system contributed to the failure of the valves in Penetrations 60 and 38. Post chemistry sampling indicated that the concentration of solids was on the order of 30 ppm. A filter system is being installed in the component cooling water system to reduce the amount of foreign particles in that system.