

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

December 13, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
Attn: Distribution Services Branch, DPC, ADM.
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

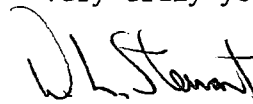
Serial No. 708
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Docket No. 50-281
License No. DPR-37

Gentlemen:

In accordance with 10CFR50, Appendix J, Section V.B., the Virginia Electric and Power Company submits the Reactor Containment Building Integrated Leak Rate Test Type A, B, and C for Surry Power Station Unit No. 2.

As requested by the NRC, added as an attachment to this letter is an analysis of the containment penetrations that were repaired during the 1983 Surry Unit 2 refueling outage. The analysis adds containment penetration "as-found" leakage to the Type A test results to determine the acceptability of the Type A test considering as found leakage.

Very truly yours,



W. L. Stewart

Enclosure

cc: Mr. James P. O'Reilly
Regional Administrator
Region II

Mr. D. J. Burke
NRC Resident Inspector
Surry Power Station

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LOCAL LEAK RATE TEST SUMMARY ANALYSIS

After the performance of the Type A Test, a request was made by the Nuclear Regulatory Commission to provide an analysis of the containment penetrations that were repaired during the 1983 Surry Unit No. 2 Refueling Outage. The details of this analysis are shown on the following pages.

A conservative analysis of the repairs indicates that only Penetration 38 would have potentially impacted the "as-found" Type A test results. The local leak rate test for both valves (each was tested individually) indicated a seat leakage in excess of 40 standard cubic feet per hour (scfh). Actual seat leakage could not be recorded, as this represents the highest range flowmeter used for Type C testing at Surry. If the actual seat leakage had been in excess of 124 scfh, the "As-Found" Type A test results would have exceeded the acceptance criteria.

In order to prevent this situation from happening again, VEPCO will perform the following actions:

- a. Evaluate the test equipment used for local leak rate testing to provide capability for measuring seat leakage up to the equivalent of leakage allowed (L_a) in scfh.
- b. Initiate an evaluation of Penetration 38 to determine the potential cause for valve degradation in order to develop a corrective action program.

The results of these evaluations will be reported separately by letter and not as an addendum to this report.

Specific penetrations were repaired during the 1983 Surry Unit No.2 refueling outage. The effect of each repair was analyzed to predict the outcome of the Type A test if it were performed prior to the repairs. Each penetration is reviewed using the following criteria:

- a. A leakage equivalent to the repair is calculated for each valve in the penetration.
- b. The leakage equivalent is the difference between the "as-found" and the "as-left" LLRT valves.
- c. If a repair was not performed, a zero leakage equivalent is assessed to the valve.
- d. The leakage equivalent assessed to a penetration maybe reduced due to the safety-related service of the penetration. Justification for these penetrations will be provided.

- e. The net leakage equivalent will be added to the leakage result of Section 3.3.2.
- f. If the results of the "as-found" Type A are less than 0.1 percent/day, the test is declared a success.

The following penetrations were repaired.

<u>Penetration</u>	<u>Inside</u>	<u>Outside</u>	<u>Net</u>	<u>Remarks</u>
7 Safety Injection	-	6.1	6.1	
28 Chemical and Volume Control	>40	0	0	
33 Gaseous Drains	0.5	0	0	
38 Aerated Drains	>40	>40	>40	See Note 1
45 Primary Grade Water	0.6	0	0	
46 Charging	-	>40	0	See Note 2
47 Instrument Air	1.1	1.9	1.1	
50 Safety Injection	>40	0	0	
56B Sample System	0	1.6	0	
69 Recirculation Spray	-	>40	0	See Note 3
92 Containment Vacuum	-	7	7	
93 Containment Vacuum	-	0.8	0.8	
94 Containment Vacuum	0.3	0.5	0.3	

Methods were applied, as described in (e) and (f) above, with the results listed below.

1. Net Equivalent Leakage >55.3 scfh
2. "As-found" Type A-TT (Percent/Day)
 - a. Total Time Analysis from 3.3.2.1 0.060643
 - b. Net Equivalent Leakage >0.018152

c.	"As-Found" Type A-Total Time Analysis	>0.078795
3.	"As-found" Type A-MP	(<u>Percent/Day</u>)
a.	Mass Point Analysis from 3.3.2.2	0.029158
b.	Net Equivalent Leakage	>0.018152
c.	"As-found" Type A-Mass Point Analysis	>0.047310

CONCLUSION

The "as-found" Type A results using the Total Time and the Mass Point Analysis indicate that there is a potential for exceeding the respective limits of 0.1 and 0.75 percent/day.

NOTES

1. Greater than 40 scfh represent the largest flowmeter used for the 1983 LLRT program.
2. This line is from the charging pump header and is used to fill the loops. The charging pumps are used as the high head safety injection pumps. The chemical and volume control system valves, piping, and components have been designed to permit essentially zero leakage. Periodic surveillance is performed to verify leakage is within specifications. Reference UFSAR 6.2.3.10 External Recirculation Loop Leakage.
3. The recirculation spray system is designed to operate after the DBA LOCA to depressize the containment to subatmospheric pressure (within approximately 40 minutes). The sumps' lines are filled with water and would prevent atmospheric outleakage either through operation and/or static head.