Jersey Central Power & Light Company

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February 8, 1971

Dr. Peter A. Morris, Director
United States Atomic Energy Commission
Division of Reactor Licensing
Washington D. C. 20545

Dear Dr. Morris:

Subject: Surveillance Test Failure of Vacuum Breaker Block Valves
Oyster Creek Nuclear Generating Station (DPR-16)
Docket No. 50-219

The purpose of this letter is to report additional information in connection with the subject failure that occurred on December 18, 1970 and was initially reported in our letter to you dated December 23, 1970.

The actual arrangement of this vacuum relief system is shown in Figure I, attached. The arrangement shown in Figure II-1 of Amendment 15 of our FD&SAR that has previously been discussed by our representatives, is incorrect. The actual arrangement permits local leakage testing of the vacuum relief check valves by pressurizing the space between the block valves and the check valves and measuring the pressure decay.

During the period October 17, 1970 to October 22, 1970, a successful integrated leak rate test of the Oyster Creek primary containment was performed. The total leakage measured was 64.1 SCFH, which is 28.8% of the allowable operational leak rate of 222 SCFH. On October 24, 1970, after the integrated leak rate test of the containment, the monthly surveillance test for operability of the block valves was successfully conducted for both of the valves. Based on this test, it is concluded that the condition that caused the operability surveillance test failure on December 18, 1970 of both of the block valves did not exist during or immediately after the integrated leak rate test; and that consequently, the failure has no effect on the results of the integrated leak rate test.

Local leakage rate measurements were not made immediately following the block valve adjustments that were made on December 18, 1970 since the principal concern at that time was to make the block valves operable, and it was known that the vacuum relief check valves did not leak in excess of Technical Specification limits since the containment integrated leak rate of 64.1 SCFH is less than the 111.0 SCFH that is allowed for these valves and the containment air purge valves.

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Subsequently, a number of local leak rate measurements at 35 psig, followed by operability tests, were conducted on the two parallel vacuum relief paths to determine linkage adjustments which result in minimum in-leakage through the block valves and still permit satisfactory block valve operation. These tests further verified the leak tightness of the vacuum relief check valves since no leakage was observed in a plastic bag that was taped over the reactor building end of the absorption chamber to reactor building vacuum relief system piping. Thus, it is clear that the observed pressure decay during the block valve linkage adjustment tests was due primarily to leakage back to the absorption chamber through the block valves. After the final adjustments were made to the operating mechanisms of the block valves, local leak rate tests were conducted. The leakage rates were 3.08 SCFH and 14.63 SCFH for the two paths or a total of 17.71 SCFH. These results are adjusted in accordance with the Technical Specifications to a test pressure of 20 psig using an extrapolation factor of 0.94 that has been computed for the whole containment. This result is well within Technical Specification limits since the sum of the leakage from the vacuum relief valves (17.71 SCFH) when added to the previously measured leakage from the containment air purge valves (7.98 SCFH) is 25.7 SCFH or 23.2% of the allowable value of 111.0 SCFH. Furthermore, if the vacuum relief system is assumed to have been leak proof at the time of the integrated primary containment leak rate test and the results of this local leak rate test are added to the integrated leak rate result to obtain a revised leak rate, the result would be 81.8 SCFH, which is still less than 37% of the allowable value.

The block valves have operated satisfactorily since the final adjustments. Successful operability tests were conducted on December 20, 21, 22, 23, 24, and 31, 1970 and on January 7 and 13, 1971. The cause for the December 18 failure has not been determined. New block valve internal parts have been ordered and the valves will be opened, inspected, repaired if required, and then retested during the next occasion when primary containment integrity is not required.

Very truly yours,

Ivan R. Finfrock, Jr.

Ivan R. Finfrock, Jr.
Manager, Nuclear Generating Stations

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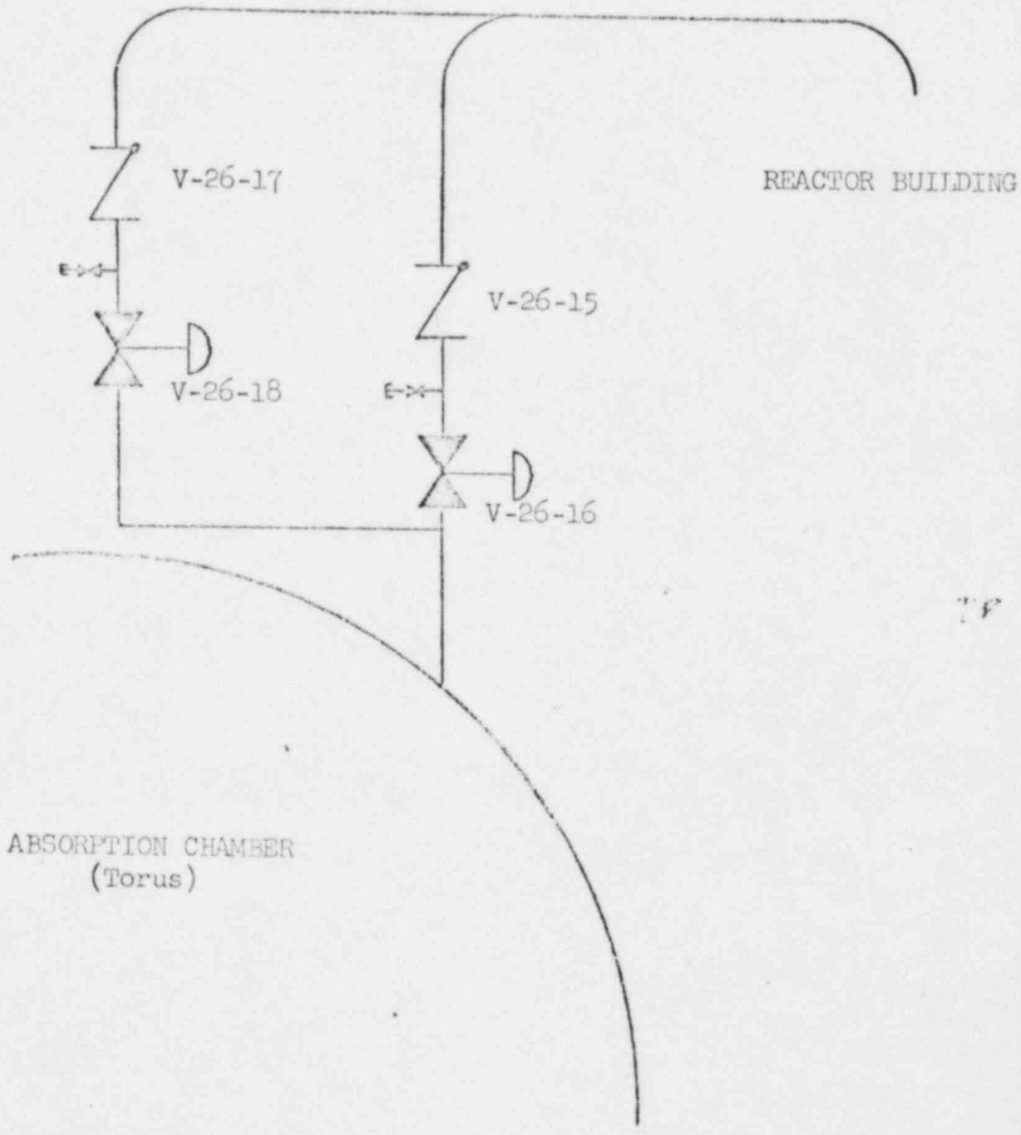
Attachmen

cc: Mr. R. W. Kirkman, Regional Director
Division of Compliance



D — Automatically activated, air operated BLOCK VALVE.
Normally Shut, Opens when torus pressure 0.5 psi < reactor building pressure.

Z — VACUUM BREAKER VALVE - relieves from reactor building to the torus.

Figure I