GPU Nuclear

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July 15, 1982

Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Crutchfield:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Containment Vent/Purge System

In accordance with your letter of January 4, 1982 and our letter of March 18, 1982 addressing the subject matter, please find attached responses to items 1, 3 and 5. It is our intention to provide the information relative to the two remaining items by October 15, 1982. As stated in our previous letter, the information presented will represent the subject system following its modification in the future.

If there are any questions concerning this matter, please contact Mr. J. Knubel at (201) 299-2264.

Very truly yours,

Peter B. Fiedler
Vice President and
Director - Oyster Creek

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cc: Ronald C. Haynes, Administrator
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pa. 19406

NRC Resident Inspector
Oyster Creek Nuclear Generating Station
Forked River, N.J. 08731

A034

Attachment
Oyster Creek Containment Vent/Purge System

1. During normal reactor operation, the drywell and torus are inerted with nitrogen to maintain the oxygen content below 5.0% by volume. The inerted drywell atmosphere is maintained between 1.25 psi to 1.5 psi by providing nitrogen through 2" make-up valves. Excess nitrogen in the drywell is exhausted manually through 2" exhaust valves.

The vent-purge system containment isolation valves have been qualified to the guidelines in the commissions September 27, 1979 letter. The actuator manufacturer recommends that the actuators be stroked at least once per month to insure that the actuator seals remain flexible and do not leak. Each valve can be operated independently, such that for surveillance cycling purposes, at least one of two redundant valves would be left closed. For these reasons, a commitment to limit the use of the subject valves to a specified annual time is deemed unnecessary.

3. Our current technical specifications require local leak rate testing of all our vent and purge valves. The valves are tested by pressurizing to 35 psig between isolation valves and measuring either the flow rate or pressure decay for leak tightness. This testing is performed once per refueling cycle.

Since our vent and purge valves are to be replaced, our current and past surveillance and operating experience with the existing valves is not applicable. However, due to the unique design of the replacement valves and the results of the manufacturer's leak tests, we expect superior performance from the replacement valves in regard to leak tightness. The new valves are torque seated and utilize a metal to metal sealing arrangement. Unlike the existing valves which are rubber-seated, we expect no deterioration of the valve seat due to age or thermal cycling.

5. During normal reactor power operation, the drywell and torus are inerted with nitrogen to maintain the oxygen content below 5.0% by volume. The drywell pressure is maintained within its operating limits via 2" make-up and exhaust valves. Should a LOCA occur during nitrogen purging when the reactor is at power, the calculated accident doses are:

	Exclusion Boundary	LPS
Thyroid Dose (REM)	5.9	2.3
Whole Body Dose (REM)	1.5	0.57

All the assumptions and methodology in the analysis were in accordance with R.G. 1.3 and SRP 6.2.4. The above results were based on the following assumptions:

a. Reactor power level of 1930 MWT
b. Purging flow rate of 1000 CFM
c. Valve closure time of 5 seconds
d. No credit for decay of radioisotopes being released to the environment
e. SGTS filter efficiency of 99% for iodine
f. SGTS filter efficiency of 0% for noble gases
g. Breathing rate of 3.47×10^{-4} cubic meters/sec
h. Atmospheric diffusion factors of:

$\frac{X}{Q}$ at Exclusion Boundary = 1.1×10^{-4} sec/cubic meters

$\frac{X}{Q}$ at LPS = 4.2×10^{-5} sec/cubic meters