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July 1, 1988

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Mail Station P1-127
Washington, D.C. 20555

Gentlemen:

Subject: Oyster Creek Nuclear Generating Station (OCNGS)
Docket No. 50-219
SEP Topic V-5, Reactor Coolant Pressure Boundary (RCPB) Leakage Detection IPSAR 4.16.1, Airborne Particulate and Gaseous Radioactivity Monitors

The purpose of this letter is to provide the Staff with our current activities and future plans associated with the drywell airborne particulate and gaseous radiation monitoring system (APGRMS).

As documented in Section 4.16.1 of the NRC Staff's Integrated Plant Safety Assessment Report (IPSAR - NUREG 0833), for SEP Topic V-5, Reactor Coolant Pressure Boundary (RCPB) Leakage Detection, GPUN committed to identify the system modifications necessary to make the installed airborne particulate and gaseous radioactivity monitors operational. Subsequently an attempt was made to restore the APGRMS, however it was determined that replacement rather than repair of the existing system was more cost effective.

In our letter dated July 8, 1986 we requested cancellation of our commitment to restore the APGRMS. The letter described the diversity and adequacy of the sump monitoring system available at Oyster Creek to detect RCPB leakage quantitatively and stated that the APGRMS would be of little use in quantifying leakage rates to meet Technical Specification limits. It stated that the APGRMS would measure the leakage indirectly through released radioactivity and could only be used as a trending indication of the leakage which must be confirmed and quantified by other means. It also stated that there are other data available such as drywell pressure, humidity and temperature which can also provide qualitative or trending information concerning RCPB leakage comparable to that provided by the APGRMS.

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Your letter dated March 12, 1987 denied our request for cancellation on the basis that GPUN did not supply sufficient information such as the sensitivity of drywell pressure, humidity and temperature data and concluded that the APGRMS should be installed during the upcoming 12R outage.

GPUN proceeded with a detailed evaluation which attempted to supply the additional information the Staff referred to. The evaluation pointed out that the interpretation of drywell atmosphere contamination in terms of reactor coolant leakage could lead to ambiguous results because different portions of the reactor coolant system contain different levels of radioactive contamination. It also indicated that pressure and humidity would respond well to leakage and could be better quantified. However, we have also recently concluded that these indications may be masked by operator action. Because of this, we have decided to replace the APGRMS to provide the diversity required by the Staff.

We plan to accomplish the modification in two phases. The first phase, which will be completed during the upcoming 12R outage, consists of those activities which require the plant to be shutdown, i.e., rerouting the existing piping and relocating electrical controls for control of isolation valves. To this end, GPUN has completed the engineering and installation specification and initiated the material procurement effort. The second phase, installation of a new APGRMS, will be completed during the operating Cycle 12. Our Integrated Schedule Project Listing will be revised to reflect this revised schedule commitment.

It must be noted that there are several leak detection methods available for unidentified leakage into the containment sump at Oyster Creek which operate on diverse principals.

> The normal method of monitoring unidentified leak rate is to obtain flow integrator readings from the containment sump pump discharge every four hour period and calculate average flow rate. Approximately 1 gpm can be measured in a four hour interval. This methodology is identified in Oyster Creek Technical Specifications as the primary method of leakage measurement.
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> When the flow integrator is not available, the average leakage rate can be calculated using the known volume between the high and the low level alarms for the sump and the time required to fill the sump between these levels.
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> A recorder available in the control room also provides continuous indication of an estimated unidentified leak rate to the containment sump by utilizing a differential pressure signal as a result of the sump level change. The sensitivity of the recorder is approximately 0.2 gpm.

Additionally, a timer available in the 480 volt switch gear room provides the run time of the containment sump pumps. This run time along with the estimated flow rate of the sump pumps can provide approximate leak rates. This methodology is utilized every four hours during power operation.

Also, an annunciator will alarm in the control room if the time to fill the containment sump is too short an interval. The time associated with this alarm is set to bring in the alarm if unidentified leak rate equals or exceeds 4 gpm.

These methods provide quantitative indications of unidentified RCS leakage inside containment and also provide assurance that unidentified leakage can be detected and quantified during Cycle 12 operation pending operability of the new APGRMS which will provide an additional diverse and qualitative means of leak detection.

If you need any additional information regarding our plan, please contact Mr. M. Laggart, Manager, BWR Licensing at (201)316-7968.

Very truly yours,

E. E. Fitzpatrick
Vice President and Director
Oyster Creek

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