U. S. NUCLEAR REGULATORY COMMISSION
Region I

Report No. 50-271/83-16

Docket No. 50-271

License No. DPR-28 Priority -- Category C

Licensee: Vermont Yankee Nuclear Power Corporation

1671 Worcester Road

Framingham, Massachusetts 01701

Facility Name: Vermont Yankee Nuclear Power Station (VYNPS)

Inspection At: Vermont Yankee Nuclear Power Station, Vernon, Vermont

Inspection Conducted: June 6-10, 1983

Inspectors: Richard K. Struckmeyer
R. K. Struckmeyer, Radiation Specialist — 6/23/83 date signed

J. C. Jang
J. C. Jang, Radiation Specialist — 6/23/83 date signed

Approved By: W. J. Pasciak
W. J. Pasciak, Chief, Effluents Radiation Protection Section, Radiological Protection Branch — 6/23/83 date signed

Inspection Summary: Inspection on June 6-10, 1983 (Report No. 50-271/83-16)

Areas Inspected: Routine, unannounced inspection of environmental monitoring programs for operations, including: management controls for these programs; the licensee's program for quality control of analytical measurements; implementation of the radiological environmental monitoring program and meteorological monitoring program; and followup on the licensee's actions on previous inspection findings. The inspection involved 56 onsite inspector-hours by two regionally-based inspectors.

Results: Of the four areas inspected, no violations were found.

DETAILS

1. Individuals Contacted

*B. Ball, Environmental Coordinator
*S. Jefferson, Operations Superintendent
E. Keegan, Chemistry and Health Physics Technician
*B. Leach, Chemistry and Health Physics Supervisor
*R. Pagodin, Engineering Support Supervisor
*J. Pelletier, Plant Manager
D. Porter, Chemistry and Health Physics Technician
D. Reid, Technical Services Superintendent

*denotes those present at exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item (271/81-11-01): Air sampling station pumps. The inspector reviewed the licensee's corrective actions and verified that the problem of pump failure has not recurred since the pumps were replaced with new ones of a different manufacturer.

(Closed) Unresolved Item (271/81-11-02): Evaluation of TLD Performance per Regulatory Guide 4.13. The inspector reviewed the results of the licensee's TLD Evaluation Program, dated September 2, 1982, and determined that the necessary tests had been performed, and that the results were in compliance with the requirements of Regulatory Guide 4.13.

(Closed) Followup Item (271/81-11-03): Annual collection of meat, poultry, eggs, fruits, and vegetables. The licensee has documented its attempts to obtain these samples. Silage and vegetable samples were obtained in 1982. Meat, fruits, poultry, and eggs were not available in reasonable proximity to milk sampling stations. Although the Technical Specifications only require the collection of such samples in reasonable proximity to milk sampling stations, subject to availability at the end of the grazing season, the inspector discussed with the licensee the value of obtaining such samples at other locations and times.

3. Management Controls

The inspector reviewed the licensee's management controls for the radiological monitoring program, including assignment of responsibility, program audits, and procedure.

a. Assignment of Responsibility

The inspector determined that organizational changes and personnel reassignments since the last inspection in this area have resulted in no decrease in management control of the radiological environmental monitoring program.

b. Program Review and Audit

The inspector reviewed the results of annual audits of the Yankee Atomic Electric Laboratory (YAEL) in which Vermont Yankee Nuclear Power Station participated, conducted in October 1981, and August 1982, and noted that corrective actions were followed up and completed as necessary.

The licensee stated that no internal audit of the radiological monitoring program has been conducted since at least 1976. The Technical Specifications do not require such audits. The inspector discussed with the licensee the value of periodic audits, and the licensee noted that such audits will be required when new Radiological Environmental Technical Specifications go into effect.

c. Procedures

The inspector reviewed written and approved procedures for implementing the radiological environmental monitoring program and the meteorological monitoring program, and found no significant discrepancies or deficiencies.

4. Licensee Program for Quality Control of Analytical Measurements

The inspector reviewed the licensee's quality control program for environmental radioanalytical measurements, including selected procedures and results of the YAEL program. It was noted that the YAEL QA program includes participation in the EPA Interlaboratory Comparison program, analysis of blind, duplicate samples, and of blank and spiked samples. The inspector reviewed selected quality control results for 1981 and 1982, and noted that discrepancies were evaluated and satisfactorily resolved.

The licensee stated that quality control of the environmental TLD program is by participation in the US Department of Energy intercomparison program. In the most recent intercomparison tests, the Vermont Yankee TLDs were shown to be about 3% low, which is within acceptable limits. The licensee stated that it is investigating reasons for this negative bias.

The inspector verified that calibrations of air sampling and meteorological instrumentation were performed at established frequencies.

The inspector discussed with the licensee the method of calibration of environmental TLDs, noting that because of the very small doses involved, the potential for error in the calibration technique is relatively large. The licensee stated that the methods by which the TLDs and the calibration source are placed in position are very reproducible, and that the calibration is timed with sufficient accuracy using a wristwatch with seconds indication. The inspector pointed out the possibility of introducing systematic errors by these methods, and suggested the use of a stop watch with traceable accuracy, and investigation into a method by which placement of the TLDs and source would be independent of the person doing the calibration.

5. Implementation of the Radiological Environmental Monitoring Program

The inspector observed selected environmental monitoring stations including air samplers, TLDs, and river water sampling. The procedure for TLD readout was observed, and the licensee described the calibration facility and method of calibration for TLDs. Procedures for each of these functions were examined.

The inspector discussed with the licensee the possibility of cross contamination of air sampler particulate filters, and suggested the use of plastic forceps for removal of any filters that became stuck to their holders, to avoid touching the surface of used filters during the change-over.

The licensee stated that some apparently erroneous TLD readings in the past have been due to accidental interchange of the dosimeters. The majority of the dosimeters carry no individual identification (some of the older ones were etched with ID numbers by the manufacturer); instead, the shields (in which the TLDs are stored) bear ID numbers. If two or more TLDs are removed from their shields at the same time, the possibility of interchange exists. The inspector discussed with the licensee the value of identification codes on each dosimeter.

The inspector stated that certain aspects of the TLD readout procedure (Section A of O.P. 4510 "Environmental Radiation Surveillance") appear somewhat confusing. Because of the way in which Chemistry and Health Physics Technicians are rotated through different tasks in their department, each technician repeats this procedure at relatively infrequent intervals, and the potential exists for misunderstanding. Careful attention to the entiret, of Section A should reduce the chance of error. However, Part 3, "Use of tne EG&G TLD Reader," and Part 4, "Use of the Victoreen TLD Reader," contain instuctions for rezeroing the TLDs, followed by instructions for reading them. Rezeroing prior to reading will cause the loss of the desired information. The inspector noted that any potential problems would be avoided by including one or two additional sentences in the procedure between the instructions for zeroing and reading of TLDs to explain the circumstances under which each portion of the procedure is to be followed.

6. Meteorological Monitoring

The inspector reviewed the operation of the meteorological monitoring system, including the primary instrument tower, the signal processing equipment and back-up recorders in the Relay House, and the main recorders and printers in the Control Room. The inspector reviewed the calibration procedures and records, and found that the procedures were thorough and calibrations were performed as scheduled.

7. Exit Interview

The inspector met with the licensee representatives denoted in Paragraph 1 at the conclusion of the inspection on June 10, 1983. The inspector summarized the purpose and scope of the inspection, and presented the findings.