

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-309/94-08
Docket No. 50-309
License No. DPR-36
Licensee: Maine Yankee Atomic Power Station
83 Edison Drive
Augusta, Maine 04336
Facility Name: Maine Yankee Atomic Power Station
Inspection At: Wiscasset, Maine
Inspection Conducted: May 2-6, 1994

Inspector:

Jason C. Jang
Jason C. Jang, Senior Radiation Specialist
Effluents Radiation Protection Section (ERPS), Facilities
Radiological Safety and Safeguards Branch (FRS&SB),
Division of Radiation Safety and Safeguards (DRSS)

5-13-94
Date

Approved by:

V.V. Holtan
Acting Chief, ERPS, FRSSB, DRSS

5-17-94
Date

Areas Inspected: Announced safety inspection of the radiological environmental monitoring program including: management controls, quality assurance audits, quality assurance and quality control (QA/QC) of the measurement laboratory, meteorological monitoring program, and the implementation of the above programs and the Offsite Dose Calculation Manual (ODCM).

Results: Within the areas inspected, the licensee has effectively implemented the above programs. No safety concerns or violations of NRC requirements were identified.

DETAILS

1.0 Individuals Contacted

1.1 Licensee Personnel

- * R. Blackmore, Plant Manager
- * N. Caristo, Radiation Programs Section Head
- * J. Frathingham, Manager, Quality Programs Department
- * R. Hayward, QA Supervisor
- * S. Nichols, Technical Support Manager
- * R. O'Clair, Environmental Specialist
- * G. Pillsbury, Radiation Protection Manager
- * J. Weast, Licensing Engineer

1.2 NRC

- * W. Olsen, Resident Inspector
- * J. Yerokun, Sr. Resident Inspector

1.3 State of Maine

- * P. Dostie, State Nuclear Safety Inspector

* Denotes those present at the exit meeting on May 6, 1994.
Other licensee employees were contacted and interviewed during this inspection.

2.0 Purpose

The purpose of this inspection was to review the licensee's capability to implement the following areas during both normal and emergency operations.

- (1) Radiological Environmental Monitoring Program (REMP)
- (2) Implementation of the Offsite Dose Calculation Manual (ODCM).
- (3) Meteorological Monitoring Program (MMP).

3.0 Management Controls

3.1 Organization

During the previous inspection conducted in June 1993, the inspector noted that the licensee had changed the organization for implementing the REMP. The Environmental Specialist reported to the Radiation Programs Section Head, who reported to the Manager of Technical Support through the Assistant Manager. The Manager of Technical Support reported to the Plant Manager. At the time of the previous inspection, the Radiation Programs Section had responsibility for the REMP for two months. The inspector stated during that inspection that the effectiveness of the organizational change would be reviewed during a subsequent inspection.

During this inspection, the inspector reviewed the licensee's organization and discussed with members of the Technical Support Department any changes made since the last inspection. The inspector noted that the Radiation Programs Section had assumed responsibility permanently for the REMP. The inspector noted that the Environmental Specialist had very good support from the Radiation Programs Section.

Based on interviews with personnel and observation of personnel implementing the REMP, the inspector determined that the above change enhanced the REMP significantly.

3.2 Quality Assurance Audit

The inspector reviewed the following licensee's Quality Assurance Audit Report.

- MY-93-02 "Chemistry/Radiological Effluent Technical Specifications (RETS)/REMP/ODCM", dated July 9, 1993.

The MY-93-02 audit had been conducted during the period of May 17-28, 1993. The audit was performed by members of the Quality Programs Department and contracted technical specialists from an other organization (Yankee Atomic Electric Company). The audit covered the stated objectives and was of sufficient technical depth to assess the REMP, including the meteorological monitoring program. This audit identified one minor observation in the REMP area that had no safety significance. The

observation was assigned to the appropriate personnel and the response was very good and was timely. The inspector had no further questions in this area.

3.3 Review of Annual Report

The inspector reviewed the Annual Radiological Environmental Operating Report for 1993, as well as the 1994 available analytical results, and the results of the Land Use Census required by the Offsite Dose Calculation Manual (ODCM)/Technical Specifications (TS). The Annual Report was well written and provided a comprehensive summary of the analytical results of the REMP around the Maine Yankee site and met ODCM/TS reporting requirements. Records of the analytical results for 1994 indicated that samples were collected as required and the lower limits of detection specified in the licensee's ODCM/TS were met. No obvious omissions, trends, or anomalous measurements were identified.

4.0 Implementation of the REMP

4.1 Direct Observations

The inspector examined selected environmental sampling stations to determine whether samples were being collected from the locations designated in the ODCM/TS and whether the air samplers were operable, calibrated, and maintained. These stations included air samplers for particulate and airborne iodines, an automatic composite water sampler, a number of TLD (thermoluminescent dosimetry) stations for direct ambient radiation measurements, milk, and vegetation.

All the air sampling equipment was operational at the time of the inspection. Calibration tags on the gas meters for the air samplers were attached as required by the licensee's procedure. TLDs were placed at their designated locations, and the water compositors were operating and taking samples. Milk and vegetation samples were available from the locations specified in the ODCM/TS for analyses.

Many malfunctions occurred in the automatic estuary water sampler at the plant outfall location during 1993. The inspector reviewed the licensee's efforts to correct the malfunctions. These efforts were documented in the Annual Report, as required. The automatic sampler was in operation at the time of this inspection.

The inspector noted that the Environmental Specialist was contacted by a farmer for the availability of milk. The farmer informed the Environmental Specialist that he will discontinue milk production in the near future. The inspector discussed with the licensee collecting an alternate sample, such as grass sample, if there is no alternate milk available. The licensee was pursuing this matter correctly and expects to resolve it in the near future.

Based on independent observation and interviews with the licensee, the inspector identified no problems with the licensee's sampling equipment.

4.2 Implementation of the REMP

The inspector reviewed the following licensee procedures as part of the examination of the implementation of the REMP as described in Section 5.8 of the Technical Specifications.

- o 9-16-100, Radiological Environmental Monitoring Program
- o 9-316-1, Effluent Environmental Monitoring
- o 9-316-2, Ingestion Pathway Environmental Monitoring
- o 9-316-3, Land Use Census
- o 9-316-4, Environmental TLD Program

Procedure 9-16-100 described the major elements and responsibilities of the REMP at the site. Procedure 9-316-1 contained requirements for sample collection frequencies, techniques, and locations for various environmental sample media (air particulates, air iodines, water, and sediment). Guidance for sample preparation, shipping and record keeping was provided in this procedure. Calibration methods for the air flow meters and dry gas meters of the air samplers were described in the procedure. Procedure 9-316-2 also contained requirements for sample collection frequencies, techniques, and locations for various environmental sample media, such as milk, fish and invertebrates, broad leaf vegetation, mixed grass, and marine algae. Procedure 9-316-3 contained requirements for land use census techniques. Procedure 9-316-4 contained requirements for the calibration and quality control of TLDs and the TLD reader.

All the environmental samples, including TLDs, were sent to Yankee Atomic Electric Company Environmental Laboratory (YAEL) for analyses. The analytical results are reviewed by YAEL staff and returned monthly to the licensee where they are reviewed. The analytical results are reported in the Annual Radiological Environmental Operating Report.

The inspector reviewed an environmental TLD comparison study conducted by the licensee and YAEL. Before YAEL assumed responsibility for the environmental TLD program, YAEL collocated their TLDs along with the licensee's during the last quarter of 1993. The average TLD results of the licensee and YAEL were 7.6 $\mu\text{R/hr}$ and 7.7 $\mu\text{R/hr}$, respectively, which was excellent agreement.

The inspector reviewed the most recent calibration results for the air flow meters and gas meters for the air samplers and noted that all reviewed calibration results were within the licensee's acceptance criteria.

Based on the above procedure/record reviews and interviews with the licensee, the inspector determined that the procedures were technically sound, detailed, and provided the required direction and guidance for implementing an effective program. In fact, the licensee had implemented an excellent REMP.

5.0 Quality Assurance/Quality Control of Analytical Measurements for the REMP

The inspector reviewed the licensee's programs for quality assurance (QA) and quality control (QC) of analytical measurements to determine whether the licensee had adequate controls with respect to sampling, analyzing samples, and evaluating data for implementing the REMP. The quality control of analytical measurements was conducted by YAEL. YAEL conducted an intralaboratory quality control program to assure the validity and reliability of analytical data. The laboratory participated in the EPA cross-check program, required by the ODCM/TS, and a blind duplicate quality assurance program. The results of each of the programs were documented in the Annual Report.

Based on the above reviews, the inspector determined that the licensee had in place comprehensive QA/QC programs for the REMP.

6.0 Land Use Census

The Annual Land Use Census required by the ODCM/TS was to identify the location of the nearest milk animal, residence, and garden of 50 m² within a distance of five miles. The Annual Land Use Census must be performed between the dates of June 1 and October 1 of each year, which was required by the ODCM/TS. The inspector reviewed the 1993 Land Use Census results. The Land Use Census was conducted by the licensee and YAEL staff member between August 11 and September 24, 1993. The inspector determined that the Land Use Census report evaluated the

aforementioned areas and was of sufficient technical depth to assess any changes in these areas around the Maine Yankee site.

7.0 Meteorological Monitoring Program (MMP)

The inspector reviewed the licensee's Meteorological Monitoring Program (MMP) to determine whether the instrumentation and equipment were operable, calibrated, and maintained. The inspector reviewed the following procedures and the most recent calibration results for the meteorological parameters, such as wind speed, wind direction, temperature, and delta temperature.

- o No. 6-100-1, "Weekly Meteorological System Calibration Check"
- o No. 6-100-2, "Quarterly Calibration of the Meteorological System"

The Instrument and Controls Department had responsibility to maintain all the sensors on the meteorological tower. Quarterly calibrations were performed by the vendor using the licensee's procedures. The inspector noted that the calibrations were performed as scheduled, the procedures were well written and provided the required direction and guidance for implementing the required tasks, and the results were within the licensee's acceptance criteria. The inspector compared the meteorological parameters between the computer and the analog chart recorder outputs located in the control room. The results were in agreement taking into account variance in the output data of the analog chart recorders. The inspector noted that the sensors on the tower and the strip charts were operating at the time of the inspection.

Based on the above review, the inspector determined that the licensee implemented the meteorological monitoring program very effectively.

8.0 Exit Interview

The inspector met with licensee representatives (denoted in Section 1.1 of this inspection report) at the conclusion of the inspection on May 6, 1994. The inspector summarized the purpose, scope, and findings of the inspection. The licensee acknowledged the inspection findings.