

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-029/85-10

Docket No. 50-029

License No. DPR-3

Priority -

Category C

Licensee: Yankee Atomic Electric Company

1671 Worcester Road

Framingham, MA 01701

Facility Name: Yankee Nuclear Power Station

Inspection At: Rowe, Massachusetts

Inspection Conducted: May 28-31, 1985

Inspectors:

Richard K. Struckmeyer
Radiation Specialist

6/26/85
date

Thomas E. Tuccinardi
Radiation Specialist

6/26/85
date

Approved by:

Mohamed M. Shanbaky
Chief, PWR, RPS

7/3/85
date

Inspection Summary: Inspection on May 28-31, 1985 (Inspection Report No. 50-029/85-10)

Areas Inspected: Routine, unannounced inspection of operational radiological environmental monitoring program, including: licensee action on previous inspection items; management controls; the licensee's program for quality control of analytical measurements; meteorological monitoring; and implementation of the radiological environmental monitoring program. The inspection involved 40 inspection-hours onsite by two region-based inspectors.

Results: Within the areas inspected, no violations were identified.

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DETAILS

1. Individuals Contacted

Yankee Nuclear Power Station

* R. Boutwell	Technical Services Supervisor
* B. Drawbridge	Assistant Plant Superintendent
J. Gedutis	Senior Chemist
M. Gilmore	QA Engineer
* T. Henderson	Technical Director
* R. Mellor	Chemistry Manager
* W. Myers	Environmental Scientist
* L. Reed	Senior QA Engineer
* D. Rice	Plant Engineer
* N. St. Laurent	Plant Superintendent

U.S. Nuclear Regulatory Commission

* H. Eichenholz Senior Resident Inspector

* Denotes those present at exit meeting on May 31, 1985.

2. License Action on Previous Inspection Findings

(Closed) Inspector Followup Item (029/81-09-01): Audits of Environmental Program Management. The inspector reviewed a recent audit of the Radiological Effluents Technical Specifications (Y-84-19) and verified that it covered the areas of environmental sampling and review of results.

(Closed) Unresolved Item (029/84-04-01): Criteria in procedure for acceptance and reporting of analytical results per Technical Specification 4.4.7, Table 4.4.-2, Item 4.B. The inspector reviewed revised procedures AP-9001, "Primary Chemistry Test Frequencies and Specifications" and AP-9003, "Chemistry Instructions, Reports and Records" and verified that the necessary criteria are now included.

(Closed) Inspector Followup Item (029/84-04-02): Adequacy of licensee audits of radwaste program (liquid and gaseous). The inspector reviewed audits of Chemistry (Y-84-02) and of Radiological Effluents Technical Specifications (Y-84-19). These audits contained items that addressed various aspects of the liquid and gaseous effluents program.

3. Management Controls

The inspector reviewed the licensee's management controls for the Radiological Environmental Monitoring Program (REMP), including

assignment of responsibility, program audits, and corrective actions for identified inadequacies and problem areas in the program.

a. Assignment of Responsibility

The inspector reviewed the organization and administration of the REMP, and confirmed that the present organization is as described in Amendment 74 to the Appendix A Technical Specifications. Operation of the environmental monitoring programs at the Yankee Nuclear Power Station is the responsibility of the Chemistry organization. The Chemistry Manager reports to the Technical Director, who in turn reports to the Plant Superintendent. Environmental samples are sent to the Yankee Atomic Environmental Laboratory for analysis, with the exception of the environmental TLD's, which are analyzed by Chemistry personnel in the licensee's Emergency Operations Center.

b. Program Review and Audits

The inspector reviewed the audit of the radiological environmental monitoring program for 1984, Audit number Y-84-19, performed November 6-9, 1984. This audit covered radiological environmental sampling, environmental TLD monitoring, QA program procedures, implementation of the ODCM, and provisions of Regulatory Guides 1.21 (Rev. 1) and 4.1 (Rev. 1). These areas were audited as required by Section 6.5.2.9 of the Technical Specifications, Amendment 80, which went into effect October 1, 1983.

The licensee has constructed a matrix of audit items based on Technical Specification requirements, from which various items are selected for audit in a given year. The inspector noted that Sections 3/4.11 (Radioactive Effluents) and 3/4.12 (Radiological Environmental Monitoring) were not explicitly referenced in this matrix, although the requirements contained in these sections were covered by the audit of section 6.5.2.9. The licensee stated that the matrix would be revised to reference sections 3/4.11 and 3/4.12, with a provision that these sections are covered by the audit of section 6.5.2.9.

The inspector noted that while the licensee's audit plan covers Section 6.9, Reporting Requirements, recent audits apparently have not covered the annual radiological environmental operating report and the semiannual radioactive effluent release report. The inspector reviewed these reports and found them to be in accordance with Technical Specifications (Section 6.9.5). Although the lack of licensee audit coverage of these reports had no radiological consequences, the inspector stated that these reports should be included in the list of auditable items.

4. Licensee Program for Quality Control of Analytical Measurements

The licensee described the QC program conducted by the Yankee Atomic Environmental Laboratory. The laboratory participates in the EPA Cross-Check program. In addition, approximately 25% of the laboratory throughput consists of various quality control samples: blind duplicates, replicates, blanks, and spiked samples. The licensee submits blind duplicates of water and milk samples according to its procedure OP-4972, which includes provisions for review of the laboratory's results and criteria for accepting or rejecting the results.

The licensee participates in the International Environmental Dosimeter Intercomparison Projects, sponsored by DOE, NRC, and EPA. Results for the Seventh Intercomparison, held in 1984, indicated close agreement between the licensee's results and the actual dose delivered (as reported by the project's sponsors), with the exception of the result for one of the field-irradiated dosimeters. The licensee's estimation of the dose to this dosimeter was substantially higher than the sponsor's estimate of the delivered dose. The licensee stated that the discrepancy might be attributed to the non-uniformity of the field, as described in the sponsors' Preliminary Report. The licensee further stated that it has contracted for a study of its environmental TLD system, and is presently awaiting the results.

5. Implementation of the Radiological Environmental Monitoring Program

a. Direct Observation

The inspector examined selected environmental monitoring stations, including particulate and iodine air sampling equipment, direct radiation (TLD) stations, and a compositing water sampler. The inspector determined that the examined stations were located as required by the Offsite Dose Calculation Manual and were operating at the time of the inspection. The inspector also noted that the gas meters used in the air sampling equipment were calibrated as required.

b. Review of Reports and Records

The inspector reviewed the 1982, 1983, and 1984 Radiological Environmental Monitoring Reports, and determined that these were complete and comprehensive summaries of the sampling, analyses, and results of the REMP, including the various aspects of quality control.

c. Procedures

The inspector reviewed the licensee's procedure for implementation of the REMP, and noted that this procedure covered the overall plan for radiological environmental monitoring at Yankee, as well as specific instructions for sampling each of the environmental media

included in the program. Procedures for analyses of environmental samples are written and maintained by the Yankee Atomic Environmental Laboratory, with the exception of environmental TLD analyses. The licensee performs its own TLD analyses according to separate procedures for the readout of the dosimeters and for annual determinations of their accuracy and precision.

The inspector also reviewed procedures for implementation of the Offsite Dose Calculation Manual and for receipt and review of vendor analytical data, and found them acceptable.

6. Meteorological Monitoring

a. Operation

The inspector examined the licensee's meteorological monitoring systems, including the primary and alternate on-site meteorological towers and the control room recorder charts. It was noted that all instrumentation was operational.

b. Calibration

Responsibility for the maintenance and calibration of the meteorological monitoring system is contracted to TRC, the Research Corporation of New England. Calibrations of the instrumentation are performed quarterly, thereby exceeding the Technical Specifications requirement for semi-annual calibration. The inspector reviewed instrument calibration data for temperature, dew point, precipitation, solar radiation, wind speed and direction, and the chart recorders. All calibration data was satisfactory. Instrument calibration procedures for solar radiation and wind speed were also reviewed and found to be satisfactory. Performance of underground cabling between the meteorological towers and the chart recorders in the control room was verified to be included in the equipment calibration procedures.

7. Exit Interview

The inspector met with the licensee representatives (identified in Paragraph 1) at the conclusion of the inspection on May 31, 1985. The inspector summarized the purpose and scope of the inspection and the inspection findings. At no time during this inspection was written material provided to the licensee by the inspector.