

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-271/84-17

Docket No. 50-271

License No. DPR-28 Priority -- Category C

Licensee: Vermont Yankee Nuclear Power Corporation
RD 5, Box 169 Ferry Road
Brattleboro, Vermont 05301

Facility Name: Vermont Yankee Nuclear Power Station

Inspection At: Vernon, Vermont

Inspection Conducted: August 6-10, 1984

Inspectors: H. J. Bicehouse
H. J. Bicehouse, Radiation Specialist

8/17/84
date

Approved by: W. Paszrak
W. Paszrak, Chief, Effluents
Radiation Protection Section

8/17/84
date

Inspection Summary:

Inspection on August 6-10, 1984 (Inspection Report 50-271/84-17)

Areas Inspected: Routine unannounced inspection of the licensee's radiation protection program during the 1984 Refueling Outage including: Previously Identified Items, Audits and Appraisals, Planning and Preparation, Selection, Training and Qualification of Outage Personnel, External Exposure Control, Internal Exposure Control, Respiratory Protection, Control of Radioactive Materials and Contamination, Surveys and Monitoring and ALARA. The inspection involved 32 hours onsite by a regionally based inspector and 16 hours onsite by the Chief, Effluents Radiation Protection Section.

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

DETAILS

1. Persons Contacted

During the course of this routine inspection, the following personnel were contacted or interviewed:

- * Mr. D. Reid, Operations Superintendent
- Mr. W. Wittmer, Recirculation Piping Project Manager
- * Mr. B. Leach, Chemistry and Health Physics Supervisor
- * Mr. R. Pagodin, Engineering Support Supervisor
- Mr. D. Mohler, Health Physicist
- Mr. D. Tolin, Whole Body & Respiratory Systems Engineer
- Mr. D. Pike, Manager, Operations Quality
- Ms. J. Kowalski, Medical Services/Safety Coordinator

Other licensee and contractor employees were also contacted or interviewed during this inspection.

- * Attended the exit interview on August 10, 1984.

2. Purpose

The purpose of this routine inspection was to review the licensee's radiation protection program during the 1984 Refueling Outage with respect to the following elements:

- Previously Identified Items;
- Audits and Appraisals;
- Planning and Preparation;
- Selection, Training and Qualification of Outage Personnel;
- External Exposure Control;
- Internal Exposure Control;
- Respiratory Protection;
- Control of Radioactive Materials and Contamination, Surveys and Monitoring; and
- Maintaining Occupational Exposures ALARA.

3. Previously Identified Items

- 3.1 (closed) Inspector Followup Item (50-271/84-04-01) Review results of licensee's determination of the nature and origin of contaminated material. The results of analyses conducted by the licensee and a contractor were reviewed and discussed with the licensee.
- 3.2 (closed) Inspector Followup Item (50-271/84-04-02) Review proposed measures to prevent recurrence of contamination. The licensee's actions to prevent recurrence of contamination were reviewed and determined acceptable.

- 3.3 (closed) Inspector Followup Item (50-271/84-04-03) Review evaluation of source and nature of contamination found adjacent to catwalk. The licensee's evaluation was reviewed and considered acceptable.
- 3.4 (closed) Inspector Followup Item (50-271/84-04-04) Review results of site survey. The site survey conducted during May 1984 was reviewed and found acceptable.
- 3.5 (closed) Violation (50-271/83-33-01) Failure to provide procedure for whole body counter in accordance with Technical Specification 6.5. The actions described in the licensee's letter of March 2, 1984 were reviewed. Vermont Yankee Procedure No. OP 0533, "Body Burden Counting," reflects the system in use for whole body counting and has been reviewed and approved in accordance with technical specification requirements.
- 3.6 (open) Inspector Followup Item (50-271/83-33-02) Review formalization of ALARA Program. Discussions with cognizant licensee personnel indicated that revision of licensee's Procedure No. A.P. 0502, "Radiation Work Permits," were undergoing review. The revisions will address the formalization of the licensee's ALARA program. However, the revisions were incomplete during the inspection. This item will be reviewed in a subsequent inspection.

4. Audits and Appraisals

The licensee's audit and appraisal program in radiation protection was reviewed against criteria provided in:

- Technical Specification 6.2, "Review and Audit";
- 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," and Criterion XVIII, "Audits"; and
- Yankee Atomic Electric Company Procedure OQA XVIII-2.

Performance relative to these criteria was determined by review of audit records and discussions with cognizant Quality Assurance personnel.

Within the scope of this review, no violations were noted.

5. Planning and Preparation

The licensee's planning and preparations for the 1984 Refueling Outage and the 1985 Recirculation Piping Replacement were reviewed against guidance provided in:

- Regulatory Guide 8.8, "Information Relevant to Ensuring That Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Is Reasonably Achievable";
- NUREG-0761, "Radiation Protection Plans for Nuclear Power Reactor Licensees"; and

- Generic Letter No. 84-07, "Procedural Guidance For Pipe Replacement at BWRs."

The licensee's performance relative to this guidance was assessed by discussions with cognizant licensee personnel.

Within the scope of this review, the following items were identified: A Recirculation Planning Task Force has been established for the 1985 piping replacement outage. In reviewing task force membership, the inspector noted that formal involvement by the Vermont Yankee Health Physics group was lacking. In response to this observation, the licensee stated that a representative of the station's health physics group will be added to the task force to provide radiation protection and ALARA expertise. This action will be reviewed in a subsequent inspection. (50-271/84-17-01)

The licensee also stated that a radiation protection plan for the 1985 Recirculation Piping Replacement will be prepared and available for review before the scheduled outage. This radiation protection plan will be reviewed during a subsequent inspection. (50-271/84-17-02)

6. Selection, Training and Qualification of Outage Personnel

6.1 General Employee Training

The licensee's general employee training program for outage personnel was reviewed against criteria provided in 10 CFR 19.12, "Instructions to Workers." The licensee's performance relative to these criteria was determined by interviews of radiation workers and selective examination of training records.

Within the scope of this review, no violations were noted.

6.2 Laundry Technicians

The licensee's training and qualification program for laundry technicians was reviewed against criteria contained in:

- Technical Specification 6.5, "Operating Procedures";
- Licensee's Procedure No. D.P. 0632, "Chemistry and Health Physics Department Training Program"; and
- ANSI N18.1.-1971, "Selection And Training of Nuclear Power Plant Personnel."

The licensee's performance relative to these criteria was determined by interviews of selected laundry technicians and examination of technician training and qualification records.

Within the scope of this review, no violations were identified.

6.3 Health Physics and Chemistry Technicians

The licensee's selection, training and qualification of contractor Health Physics and Chemistry Technicians for the 1984 Refueling Outage were reviewed against criteria provided in Technical Specification 6.5 and Licensee's Procedure No. D.P. 0632. The licensee's performance relative to these criteria was determined by interviews of selected contractor technicians, examination of training and qualification records and review of work performed by the technicians.

Within the scope of this review, no violations were noted.

7. External Exposure Control

7.1 External Exposure Control

The licensee's external exposure control program was reviewed against criteria provided in 10 CFR 20.105, 20.201, 20.203 and 20.401. The licensee's performance relative to these criteria was determined by interviews of the health physics staff, review of radiation work permits and supporting surveys and direct observations and measurements.

Within the scope of this review, no violations were noted.

7.2 Personnel Dosimetry

The licensee's personnel dosimetry program was reviewed against criteria contained in:

- 10 CFR 20.101, 20.102, 20.104 and 20.202;
- Technical Specification 6.5, "Operating Procedures";
- Licensee's Procedure No. A.P. 0501, "Radiation Protection Standards"; and
- Licensee's Procedure No. A.P. 0506, "Personnel Monitoring."

The licensee's performance relative to these criteria was determined by interviews of dosimetry personnel and examination of dosimetry records.

Within the scope of this review, no violations were noted.

7.3 High Radiation Area Controls

The licensee's control of high radiation areas was reviewed against the criteria provided in:

- Technical Specification 6.5, "Operating Procedures";
- Licensee's Procedure No. A.P. 0501, "Radiation Protection Standards";
- Licensee's Procedure No. A.P. 0502, "Radiation Work Permits";

- Licensee's Procedure No. A.P. 0503, "Establishing and Posting Radiation Controlled Areas";
- Licensee's Procedure No. O.P. 4530, "Dose Rate Radiation Surveys"; and
- Licensee's Procedure No. A.P. 0507, "Primary Containment Entry."

The licensee's performance relative to these criteria was determined by review of 17 radiation work permits and supporting surveys for drywell and control rod drive repair room high radiation areas, interviews of cognizant health physics personnel and direct observation of high radiation areas during plant tours.

Within the scope of this review, no violations were noted.

8. Internal Exposure Control

8.1 Control of Airborne Contamination

The licensee's program for control of airborne radioactive contamination was reviewed against criteria provided in:

- 10 CFR 20.103 and 20.401;
- Technical Specification 6.5, "Operating Procedures";
- Licensee's Procedure No. A.P. 0501, "Radiation Protection Standards";
- Licensee's Procedure No. A.P. 0502, "Radiation Work Permits"; and
- Licensee's Procedure No. O.P. 4533, "Airborne Radioactivity Concentration Determination."

The licensee's performance relative to these criteria was determined by examination of 20 radiation work permits and associated surveys and discussions with cognizant health physics personnel.

Within the scope of this review, no violations were noted.

8.2 Whole Body Counting

The licensee's program for in vivo determination of radioactive contamination during the outage was reviewed against criteria contained in:

- 10 CFR 20.103;
- Technical Specification 6.5, "Operating Procedures"; and
- Licensee's Procedure No. OP 0533, "Body Burden Counting."

The licensee's performance relative to these criteria was determined by interviews of the Whole Body and Respiratory Systems Engineer and members of his staff, examination of selected bioassay records and observations of whole body counting in progress.

Within the scope of this review, no items of noncompliance were noted.

9. Respiratory Protection Program

The licensee's respiratory protection program was reviewed against criteria provided in:

- 10 CFR 20.103;
- Regulatory Guide 8.15, "Acceptable Programs For Respiratory Protection";
- NUREG-0041, "Manual of Respiratory Protection Against Airborne Radioactive Materials";
- Technical Specification 6.5, "Operating Procedures"; and
- Licensee's Procedure No. A.P. 0505, "Respiratory Protection."

The licensee's performance relative to these criteria was determined by:

- interviews of the Whole Body and Respiratory Systems Engineer, two members of his staff and the Medical Services/Safety Coordinator;
- examination of fit test records, physician's determinations for users and medical requirements for contractors in Licensee's Procedure No. A.P. 0800;
- review of 27 radiation work permits, air samples supporting those radiation work permits and MPC-Hours determinations; and
- direct observation of storage, fitting, laundering, issuance and work area control of respiratory protective equipment during plant tours.

Within the scope of this review, no violations were noted.

10. Control of Radioactive Materials and Contamination, Surveys And Monitoring

The licensee's program in these areas during the outage was reviewed against criteria provided in:

- 10 CFR 19.11, 20.201, 20.203, and 20.401;
- Technical Specification 6.5, "Operating Procedures";
- Licensee's Procedure No. A.P. 0502, "Radiation Work Permits";
- Licensee's Procedure No. D.P. 0640, "Chemistry and Health Physics Department Scheduling";
- Licensee's Procedure No. D.P. 4532, "Personnel Contamination Survey";
- Licensee's Procedure No. R.P. 0520, "Personnel Decontamination Procedure";
- Licensee's Procedure No. R.P. 0521, "Area and Equipment Decontamination";
- Licensee's Procedure No. D.P. 0530, "Health Physics Data/Information Logging Procedure"; and
- Licensee's Procedure No. D.P. 0531, "Laundering of Protective Clothing."

The licensee's performance relative to these criteria was determined by:

- interviews of the Health Physicist and certain members of his staff;
- examination of health physics logs, surveys, incident reports and personnel injury records; and
- direct observations and measurements during plant tours.

Within the scope of this review, no violations were noted.

11. ALARA Program

The licensee's implementation of an ALARA Program during the refueling outage was reviewed against guidance provided in Regulatory Guide 8.8, "Information Relevant to Ensuring That Occupational Radiation Exposures at Nuclear Power Stations Will Be As Low As Is Reasonably Achievable." The licensee's performance relative to this guidance was determined by interviewing the Health Physicist.

Within the scope of this review, the inspector determined that the licensee is making progress in establishing a formalized ALARA Program.

12. Exit Interview

The inspector met with the licensee's representatives (denoted in Section 1) at the conclusion of the inspection on August 10, 1984. The inspector summarized the purpose and scope of the inspection and identified findings as described in this report.

At no time during the inspection was written material provided to the licensee by the inspector.