

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 030-29253/94-001
Docket No. 030-29253
License No. 20-27837-01 Priority 3 Category E
Licensee: Thermo Environmental Instruments, Inc.
8 West Forge Parkway
Franklin, Massachusetts 02038
Inspection At: 8 West Forge Parkway
Franklin, Massachusetts 02038
Inspection Conducted: March 15, 1994

Inspector: Steven R. Courtemanche
Steven R. Courtemanche, Health Physicist
Nuclear Materials Safety Branch
Division of Radiation Safety and Safeguards

4/13/94
date

Approved by: Walter J. Pasciak
Walter J. Pasciak, Chief
Industrial Applications Section
Division of Radiation Safety and Safeguards

4-14-94
date

Inspection Summary: Confirmatory Closeout Inspection on March 15, 1994
(Inspection No. 030-29253/94-001).

Areas Inspected: Announced, closeout inspection limited to a survey of the facility for residual contamination prior to release of the facility for unrestricted use and a review of disposal records. The facility was surveyed to identify removable contamination. The survey included the area where licensed material was stored and used at 8 West Forge Parkway, Franklin, Massachusetts. Five wipes were taken and analyzed for removable tritium contamination.

Results: One violation was identified: an unauthorized disposal of byproduct material (Section 4). No detectable removable radioactive contamination was identified. No remaining radioactive material was found. The licensee's surveys enclosed with their letter dated November 19, 1993, accurately reflects the condition of the facility.

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DETAILS

1. Persons Contacted

- *+ William Lincourt, Radiation Safety Officer
- # Edward Neel, Ex-Radiation Safety Officer
- * Dieter Kita, Ph.D., Research and Development Manager
- + Paul Gagnon, Production Worker

- * Present at exit interview
- + Interviewed during inspection
- # Interviewed by telephone March 21, 1994

2. Background

The licensee is authorized to use radioactive materials for installation, removal, distribution, testing, servicing and demonstration of specified electron capture detectors. The licensee continues to lease the facility at 8 West Forge Parkway, Franklin, Massachusetts. The area where licensed material was stored and used comprised approximately 10 square feet within a cage. The cage had been converted to the storage of nonradioactive materials by the time of the inspection.

3. Survey for Removable Contamination

A wipe survey for removable contamination was performed. Five wipes were taken of the area (floors and wall) where byproduct material was used and stored.

The wipe samples were analyzed in a Tennelec Gas Flow Proportional Counter calibrated with Technetium-99 and Thorium-230 electroplated point sources. No radioactive contamination significantly above background was identified. The estimated Lower Limit of Detection (LLD) for tritium is 99 disintegrations per minute.

The licensee conducted a wipe survey in November 1990, and did not identify any areas of contamination outside of the above box used for storing licensed material. This information was reported in a letter dated November 19, 1993.

No safety problems were identified.

4. Transfer of Licensed Material

Records were reviewed detailing the transfer of equipment, radioactive material, and non-contaminated articles disposed of by the licensee. All of the foils were disposed of by shipping them via common carrier to a licensed landfill. The proper shipping container was used and the shipping papers were correctly completed. The inspector learned from interviewing personnel that the glove box which was used for the licensee's refoiling operations was not properly disposed of. In November 1990, production personnel learned that management had decided to discontinue refoiling operations and that the glove box would no longer be needed. Without consulting management, production personnel took some dry wipes of the glove box and then disposed of the glove box. The Radiation Safety Officer was not in the office at the time and was presented the wipes for analysis a few days later after the glove box and other non-radioactive waste had been picked up by a waste broker and brought to a landfill. Subsequent analysis of the wipes indicated that the interior of the glove box was contaminated. Tritium contamination levels in the glove box were as follows:

Gloves (9.3 +/- 0.1) E+4 disintegrations per minute (DPM)
Floor of Box (8.4 +/- 0.1) E+2 DPM
Table (1.8 +/- 0.1) E+3 DPM
Inside of Door (1.9 +/- 0.1) E+5 DPM

The release criteria for tritium, according to the NRC's "Guidelines for Decontamination of Facilities and Equipment ...," is 1000 DPM for removable contamination.

The disposal of equipment contaminated with radioactive material exceeding the NRC's release criteria is an apparent violation of 10 CFR 20.301.

5. Residual Materials

No remaining radioactive material, residual radioactive contamination, or equipment was identified by the inspector.

No safety problems were identified

6. Exit Interview

The results of the confirmatory closeout inspection and survey were discussed with those individuals indicated in Section 1 of this report.

The inspector stated that the licensee would receive a report of the results of the inspection.