

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-225/84-01
70-920/84-01

Docket Nos. 50-225
70-920

License Nos. CX-22
SNM-910

Licensee: Rensselaer Polytechnic Institute (RPI)
Department of Nuclear Engineering and Science
Troy, New York 12181

Facility Name: L. David Walthousen Critical Experiments Facility
and Campus Facility

Inspection At: Schenectady and Troy, New York

Inspection Conducted: July 3, 5, and 6, 1984

Date of Last Material Control and Accounting Inspection: September 8-11, 1981

Type of Inspection: Unannounced Material Control and Accounting

Inspector: A. Della Ratta
A. Della Ratta, Safeguards Auditor

8-24-84
date

Approved by: R. R. Keimig
R. R. Keimig, Chief
Safeguards Section

8/29/84
date

Inspection Summary: Unannounced Inspection on July 3, 5, and 6, 1984 (Combined
Report Nos. 50-225/84-01 and 70-920/84-01)

Areas Inspected: Facility organization and operation; measurement and controls; shipping and receiving; storage and internal control; physical inventory; records and reports; and, management of materials control system. The inspection involved 20 inspector-hours onsite by one NRC inspector.

Results: The licensee was in compliance with NRC requirements within the areas examined, except for the following violations: (1) exceeding a limit authorized by License No. CX-22; and (2) failure to comply with 10 CFR 73.67(c).

Details

1. Persons Contacted

- *F. Wicks, Supervisor, Critical Facility, Schenectady
- R. M. Ryan, Director, Office of Radiation & Nuclear Safety, Troy Campus
- *F. J. Mastrianni, Assistant to Director, Office of Radiation & Nuclear Safety, Troy Campus

*Present at exit interview

2. 30703-Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on July 6, 1984. The inspector summarized the scope and findings of the inspection. At no time during the inspection was written material provided to the licensee by the inspector.

3. 92713-Independent Inspection Effort

Independent inspection effort was conducted by direct observations, discussions with licensee personnel, and review of records. Leak test records for twelve sealed sources were reviewed for completeness and timeliness. No exceptions were noted.

4. 85102-Material Control and Accounting

a. Organization and Operation

The inspection included discussions with licensee management and review of the licensee's Special Nuclear Materials Procedure Manual, which is incorporated into the "Radiation Safety Regulations and Procedures." Custody of all Special Nuclear Material (SNM) and the management of the nuclear material control and accountability program is the responsibility of the Director, Office of Radiation and Nuclear Safety. The critical facility core loading has been modified to reduce the quantity of enriched uranium below 5 kilograms of U-235. The total site inventory was 4990.34 grams of U-235. Of this amount 4,951.72 grams was in the core and the remaining 38.62 grams was stored in the vault.

The Radiation Safety, Officer is in the process of revising the "Radiation Safety Regulations and Procedures" to reflect current practices and names of members of the Radiation and Nuclear Safety Committee.

b. Measurement and Controls

There was no burnup reported by the licensee for the critical facility due to the low operating power level and infrequency of use.

c. Shipping and Receiving

The licensee had established and maintained procedures to ensure that all SNM received or shipped was accurately accounted for.

The licensee had no receipts or shipments of SNM during the period covered by this inspection.

d. Storage and Internal Control

The inspector reviewed the licensee's SNM file system, which provides knowledge of the quantity and location of all SNM at the two facilities. A crosscheck of the SNM records was performed by the inspector, as described in the Physical Inventory section.

e. Physical Inventory

The inspection included an inventory verification, on July 5, 1984, of the material held under License No. SNM-910 at the RPI campus. The licensee's most recent physical inventory listing was used as the basis for the verification. Selected items on the listing were located and identified by serial number or other identifying marking.

The inventory verification at the critical facility was performed by the inspector on July 3, 1984. The critical facility inventory consisted of 1 fuel plate and 600 disc foils in the storage vault and 176 fuel plates in the core. The core map was compared by a visual check to the fuel assemblies in the core. No discrepancies were noted.

f. Records and Reports

Two violations were identified.

The inspector reviewed the licensee's records, reports, and source data. Material status reports (DOE/NRC Form-742), submitted during the period of April 1, 1981 thru March 31, 1984, were reviewed for compliance with 10 CFR 70.53. With the exception of typographical errors, no discrepancies were noted.

The licensee's authorized possession limits were compared with the actual holdings. This resulted in the following two violations:

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Exhibits I through IV, attached to this report, summarizes the licensee's material activity for the period April 1, 1981 through March 31, 1984.

g. Management of Materials Control System

The inspector reviewed the Radiation and Nuclear Safety Committee annual audits of SNM control and accounting procedures/practices. The audits were conducted as required and no deficiencies were identified. The inspector did not determine whether the audits included compliance with license limits.

EXHIBIT J

Rensselaer Polytechnic Institute

Docket No. 70-920 License No. SNM-910

Materials Balance Period: April 1, 1981 - March 31, 1984

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EXHIBIT 11

Rensselaer Polytechnic Institute

Docket No. 70-920 License No. SNM-910
Docket No. 50-225 License No. CX-22

Material Balance Period: April 1, 1981 - March 31, 1984

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EXHIBIT III

Rensselaer Polytechnic Institute

Docket No. 70-920 License No. SNM-910

Material Balance Summary: April 1, 1981 - March 31, 1984

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EXHIBIT IV

Rensselaer Polytechnic Institute

Docket No. 70-920 License No. SNM-910
Docket No. 50-225 License No. CX-22

Material Balance Period: April 1, 1981 - March 31, 1984

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