

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report Nos. 50-57/89-03
70-267/89-01

Docket Nos. 50-57
70-267

License Nos. R-77
SNM-273

Licensee: State University of New York at Buffalo
Rotary Road
Buffalo, New York 14214

Facility Name: Buffalo Materials Research Center

Inspection At: Buffalo, New York

Inspection Conducted: November 13-15, 1989

Type of Inspection: Unannounced Material Control and Accounting, and
Physical Security

Inspectors: Thomas W. Oester 01/02/90
A. Della Ratta, Safeguards Auditor date

W.T. Olsen 1/8/90
W. T. Olsen, Reactor Engineer/Physical Security date

Approved by: R. R. Keimig 1-9-90
R. R. Keimig, Chief, Safeguards Section date
Division of Radiation Safety and Safeguards

Inspection Summary: Inspection on November 13-15, 1989 (Combined Report
Nos. 50-57/89-03 and 70-267/89-01)

Areas Inspected: Nuclear material control and accounting, and physical security, including: organization and operation; shipping and receiving; storage and internal controls; inventory; records and reports; and physical protection measures for special nuclear material of low strategic significance.

Results: The licensee was in compliance with NRC requirements in the areas examined during this inspection.

DETAILS

1.0 Key Persons Contacted

- *L. Henry, General Manager, Buffalo Materials Research Center (BMRC)
- *D. Sullivan, Director, BMRC
- *P. Orlosky, Operation's Manager, BMRC

*present at exit interview

2.0 Material Control and Accounting Program

- a. Program Management - The inspector verified through a review of records that the licensee maintained nuclear material control procedures that are documented in its Special Nuclear Materials (SNM) accountability Manual. Written statements of responsibility and authority had been established for those positions with responsibility for Special Nuclear Material (SNM). No discrepancies were identified.

b. Shipping and Receiving

The inspector determined through a review of records that the licensee maintained procedures to assure that all nuclear material shipped or received was accurately accounted for.

A review was performed of all DOE/NRC Form-741's generated from April 1, 1984 through September 30, 1989 to assure that each was properly signed, dispatched in a timely manner, and that the data was accurate. No discrepancies were identified.

c. Storage and Internal Control

The inspectors determined through observations and review of records that the licensee was maintaining a system of storage and internal controls that indicated the quantity, identity, and current location of all SNM within the facility. Perpetual inventory records were maintained for all SNM.

Storage and accountability of SNM was being accomplished through item control. All SNM at the facility was stored in designated areas. The designated areas are:

- ICA-IC: The control deck level fuel storage vault.
- ICA-IG: The gamma deck level fuel storage vault.
- ICA-2: The reactor core and pool storage facilities.
- ICA-3: The subcritical reactor tank.
- ICA-4: The balance of the facility, including the hot cell and approved campus laboratories.
- ICA-5H: The Parker Building.

d. Inventory

The inspector determined through a review of records that the licensee has conducted annual physical inventories of SNM as required by 10 CFR 70.51(d).

The inspectors conducted a physical inventory of SNM at the facility on November 14, 1989. The inventory included SNM on both the R-77 and SNM-273 licenses. The results of this inventory verified that each item on inventory was listed and identified.

e. Records and Reports

The inspectors audited the Material Status Reports (DOE/NRC Form-742) submitted for the period April 1, 1984, through September 30, 1989, to verify compliance with 10 CFR 70.53. With the exception of minor addition errors which were corrected by the licensee during the inspection, no discrepancies were identified.

The material balance summary for the period covered by this inspection is shown in Exhibit I.

3.0 General Physical Security Requirements for Special Nuclear Material of Low Strategic Significance

The licensee's program for the physical protection of special nuclear material of low strategic significance was reviewed by the inspectors for conformance to the NRC-approved physical security plan. The inspectors examined physical barriers, access controls, procedures, and key control, and observed a licensee test of alarm system features. The inspectors found that the licensee's program and its implementation met the general performance requirements and objectives of the governing regulations.

However, when the licensee conducted a test of the security alarm system, at the request of the inspectors, the containment building security alarms did not annunciate at the campus Division of Public Safety dispatch office, as required by the security plan. The licensee initiated an investigation of the problem immediately, and repairs were completed prior to the inspectors leaving the site. A wiring problem was found in the alarm panel in the Reactor Control Room, for which the licensee could offer no explanation for, except that a modification was installed on the system in July of this year. The licensee routinely tests the security alarm system quarterly, with the last recorded testing completed in September of this year. The licensee could not ascertain if a check was made with the Division of Public Safety dispatch office during the required quarterly testing, to verify Containment Building security alarm operability. The licensee revised the security system alarm testing procedure, prior to completion of the inspection, to ensure an alarm is received at the Division of Public Safety dispatch office. The licensee has also committed to conduct a full review of the circumstances of the

security system alarm failure and to provide follow-up information to the NRC Region I safeguards section (Unresolved Item 50-57/89-03-01).

The inspectors also reviewed the physical security plan, which has recently been revised and submitted to the NRC under 10 CFR 50.54(p) criteria. As part of this revision the licensee has relocated a special nuclear materials storage vault from the Howe Building to the Parker Building on the college campus. The new storage area was inspected to ensure that it met the requirements of the physical security plan. The new vault appeared to be satisfactory.

4.0 Exit Interview

The inspectors met with the licensee representatives indicated in paragraph 1 at the conclusion of the inspection on November 15, 1989. At that time, the purpose and scope of the inspection were reviewed and the findings were presented.

EXHIBIT I

STATE UNIVERSITY OF NEW YORK AT BUFFALO

Docket No. 50-57
Docket No. 70-267

License No. R-77
License No. SNM-273

BUFFALO MATERIALS RESEARCH CENTER

Material Balance for Period: April 1, 1984 - September 30, 1989

Reporting Identification Symbol: ZYL

Reporting Units: grams

	<u>Enriched Uranium</u>		<u>Plutonium</u>	
	<u>Element</u>	<u>Isotope</u>	<u>Element</u>	<u>Isotope</u>
Physical Inventory: (April 1, 1984)	661,116	36,532	1,309	1,206
Receipts:	4	4	-0-	-0-
Production:	<u>-0-</u>	<u>-0-</u>	<u>606</u>	<u>527</u>
Material to Account for:	<u>661,120</u>	<u>36,536</u>	<u>1,915</u>	<u>1,733</u>
Removals:				
Shipments:	2	2	-0-	-0-
Fission and Transmutation:	3,195	2,666	-0-	-0-
Inventory Difference:	-0-	-0-	-0-	-0-
Decay:	<u>-0-</u>	<u>-0-</u>	<u>11</u>	<u>11</u>
Total Removals	3,197	2,668	11	11
Physical Inventory: (September 30, 1989)	<u>657,923</u>	<u>33,868</u>	<u>1,904</u>	<u>1,722</u>
Material Accounted for:	<u>661,120</u>	<u>36,536</u>	<u>1,915</u>	<u>1,733</u>