

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 70-398/80-03

Docket no. 70-398

License No. SNM-362 Priority 1 Category Pu-Ur

Licensee: U. S. Department of Commerce

National Bureau of Standards

Washington, D. C. 20234

Facility Name: National Bureau of Standards

Inspection at: Gaithersburg, Maryland

Inspection conducted: August 27-29, 1980

Inspectors: *P. Clemons*
P. Clemons, Radiation Specialist

9/15/80
date signed

date signed

date signed

Approved by: *P. J. Knapp*
P. J. Knapp, Chief, Radiation Support
Section, FF&MS Branch

9/15/80
date signed

Inspection Summary:

Inspection on August 27-29, 1980 (Report No. 70-398/80-03)

Areas Inspected: Routine, unannounced inspection by a regional based inspector of the Radiation Protection Program including: ventilation, smear surveys, annual report, procedures, environmental monitoring, liquid waste, shipments of radioactive materials, source leak test, training, bioassay, instruments, dosimetry, drills, and outstanding items. Shortly after arrival, areas where work was being conducted were examined to review radiation control procedures and practices. The inspection involved 19 inspector hours on site by one regional based inspector.

Results: No items of noncompliance were identified.

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DETAILS

1. Persons Contacted

- *Mr. K. Bell, Deputy Director for Administrative Services
- Mr. K. Duvall, Physicist
- *Mr. T. Hobbs, Chief, Health Physics
- *Dr. C. Kuyatt, Director, Center for Radiation Research
- *Dr. H. Rook, Chief, Gas and Particulate Science Division

The inspector interviewed several other employees during the course of the inspection including, a Standards Coordinator, a Research Chemist, a Nuclear Physicist, a General Foreman, and a Physical Science Administrator.

*Denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (70-398/79-01-01): Licensee did not maintain survey records as required for compactor operations. The inspector reviewed data that indicated that air samples are taken each time the compactor is operated, and the records are being maintained.

3. Annual Report

10 CFR 20.407(b) requires licensees to submit personnel exposure and monitoring reports to the Director of Management and Program Analysis within the first quarter of each calendar year for the preceding year.

The inspector reviewed a copy of the report that was submitted on March 17, 1980. The report indicates that 415 people were monitored during 1979. The maximum exposure received by one employee was 947 millirem.

No items of noncompliance were identified.

4. Ventilation

Condition No. 10 of Special Nuclear Material License No. SNM-362 incorporates the statements, representations, and conditions specified in the licensee's application dated December 18, 1975. On Page 3 of the licensee's December 18, 1975 application is a requirement that air velocities across hood faces be maintained at a nominal 30.5 linear meters per minute.

The inspector reviewed velocity data for the period January-July, 1980, to determine if the required hood face velocity was being maintained.

No items of noncompliance were identified.

5. Leak Test

Condition No. 14 of Special Nuclear Material License No. SNM-362, requires that sealed plutonium sources be leak tested at a frequency not to exceed six months. The licensee has two plutonium sources, and the inspector reviewed leak test data, for the period January-August, 1980, which indicated that the sources were being leak tested at three month intervals.

No items of noncompliance were identified.

6. Posting

The inspector reviewed the licensee's facility for posting as required by 10 CFR 19 and 10 CFR 20.

No items of noncompliance were identified.

7. Smear Surveys

Smear surveys are performed throughout the licensee's facilities to detect the presence of radioactive material as required by 10 CFR 20.201(b).

The inspector reviewed weekly smear survey data for the period January-August, 1980. All data indicates that the contamination levels are well within the licensee's internal limits.

No items of noncompliance were identified.

8. Liquid Waste

The licensee does not routinely discharge liquid waste to the sanitary sewer. The licensee has two 5,000 gallon storage tanks that collect water from laboratory sinks. The last discharge was made during June, 1974, and the activity prior to discharge was 9×10^{-9} microcuries per milliliter of water according to data posted on one of the storage tanks in Building 245.

No items of noncompliance were identified.

9. Evacuation Drills

Evacuation drills are required to be held twice annually as stated in the licensee's application dated December 18, 1975. The inspector reviewed documentation which indicated that the drills were conducted on September 26, 1979 and March 26, 1980.

No items of noncompliance were identified.

10. Environmental Monitoring

Condition No. 10 of SNM-362 incorporates the licensee's application dated December 18, 1975. The NBS Radiation Safety Manual, submitted as an attachment to the December 18, 1975 application, requires that an environmental monitoring program be conducted at some frequency (Section 1-B-5). The perimeter of the site is required to be monitored monthly with thermoluminescent dosimeters. Other types of environmental samples (soil, water, grass, particulates, etc.) are required to be collected and analyzed periodically.

The inspector reviewed data for the period January-August, 1980, to determine if the environmental samples were being collected and analyzed as required. The data indicated that the samples were being collected and analyzed as required.

No items of noncompliance were identified.

11. Receiving Radioactive Material

10 CFR 20.205(b)(1) requires that each licensee, upon receipt of a package of radioactive material, shall monitor the external surfaces of the package for radioactive contamination caused by leakage of the radioactive contents.

The inspector reviewed documentation of three receipts of radioactive material during the period January-August, 1980, to determine if the licensee was in compliance with the monitoring requirements.

No items of noncompliance were identified.

12. Training

Condition No. 10 of SNM-362 incorporates the licensee's application dated December 18, 1975. The NBS Radiation Safety Manual, submitted as an attachment to the December 18, 1975 application, requires in Section 1-B-16 that "The Health Physics Section shall conduct at periodic intervals, not to exceed one year, training...in the fundamentals of radiation safety for all Bureau personnel...". The inspector selected the names of three Bureau employees to determine if they had received training given during the period November 1979-February, 1980.

The licensee had documented the fact that two of the employees had received training in the fundamentals of radiation safety. The inspector was told by the Chief, Health Physics, that the third individual did receive training in the fundamentals of radiation safety during a Safeguards training session. The inspector noted that the Safeguards training agenda did not support the fact that radiation safety training had been given at the same time.

No items of noncompliance were identified.

13. Dosimetry

The licensee does not provide dosimetry devices to employees routinely working with special nuclear material because the quantities of material utilized are very small, and also because the licensee has determined that no employee will approach twenty five percent of the permitted exposure.

No items of noncompliance were identified.

14. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection. The inspector summarized the purpose and scope of the inspection, and the findings as presented in this report.