

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

REGION I

Report No. 70-398/81-01

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: March 11-13, 1981

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

*5/11/81*  
date

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Approved by: *P. J. Knapp*  
P. J. Knapp, Chief, Facility Radiological  
Protection Section, Technical Inspection Branch

*5/11/81*  
date

Inspection Summary: Inspection on March 11-13, 1981 (Report No. 70-398/81-01)  
Areas Inspected: Routine, unannounced inspection by a regional based inspector of the Radiation Protection Program including: source leak test, environmental monitoring, ventilation, receiving radioactive material, posting, smear surveys, evacuation drills, liquid waste, dosimetry and training. 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.

## DETAILS

### 1. Persons Contacted

\*Mr. T. Hobbs, Chief, Health Physics  
\*Dr. C. Kuyatt, Director, Center for Radiation Research  
\*Mr. L. Pevey, Chief, Occupational Health and Safety Division  
\*Dr. H. Rook, Chief, Gas and Particulate Science Division  
Mr. L. Slaback, Supervisory Health Physicist

The inspector interviewed several other employees during the course of the inspection including a Nuclear Physicist, a Supervisor Health Physicist, a Standards Coordinator and a Research Chemist.

\*Denotes those present at the exit interview.

### 2. Source Leak Tests

Condition 14 of Special Nuclear Material License No. SNM-362, requires that sealed plutonium sources be leak tested at a certain frequency. The licensee has two plutonium sources, and the inspector reviewed leak test data, for the period January-December, 1980, which indicated that the sources were being leak tested at three month intervals.

No items of noncompliance were identified.

### 3. 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-December, 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.

### 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 velometer data for the period January-December, 1980, to determine if the required linear face velocity was being maintained.

No items of noncompliance were identified.

5. 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 several receipts of radioactive material during the period July-December 1980, to determine if the licensee was in compliance with the monitoring requirements.

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 facility 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-December, 1980. All data indicates that the contamination levels are well within the licensee's internal limits.

No items of noncompliance were identified.

8. 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 March 26, 1980 and September 24, 1980.

No items of noncompliance were identified.

9. 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  $9 \times 10^{-9}$  microcuries per milliliter of water according to data posted on one of the storage tanks in Building 245.

No items of noncompliance were identified.

10. 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.

11. 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 four special nuclear material custodians to determine if they had received the appropriate training during 1980. The licensee's documentation indicated that the employees had been trained as required.

No items of noncompliance were identified.

12. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection on March 1, 1981. The inspector summarized the purpose and the scope of the inspection, and the findings as presented in this report.