



UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

December 12, 1973

Nuclear Metals, Incorporated
Attention: Mr. W. B. Tuffin
President
2229 Main Street
Concord, Massachusetts 01742

Docket No. 70-82
License No. SNM-65

Gentlemen:

This refers to the inspection conducted by Mr. Kinney of this office on November 15-16, 1973 of activities authorized by AEC License No. SNM-65 and to the discussions of our findings held by Mr. Kinney with R. A. Robie and other members of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the Regulatory Operations Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Our inspector also inspected the steps you had taken to correct the violations brought to your attention in a letter dated October 18, 1973, following our last inspection. Your corrective action to avoid violations of the criticality safety limit of not allowing fissile material closer than three feet from exclusion area boundaries had not yet been completely defined. Except for this item, we have no further questions regarding matters discussed in this letter.

During this inspection, it was found that certain of your activities appeared to be in violation of AEC requirements. The items and references to the pertinent requirements are listed in the enclosure to this letter. This letter constitutes a notice sent to you pursuant to the provisions of Section 2.201 of the AEC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office within 20 days of your receipt of this notice, a written statement of explanation in reply, including: (1) corrective steps which have been or will be taken by you, and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved.

A150

OFFICE	GRESS					
SURNAME	Kinney	Crocker	Martin	Nelson	O'Reilly	PP
DATE	12/5/73	12/5/73	12/11/73	12/10/73		12/10

December 12, 1973

In accordance with Section 2.790 of the AEC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the AEC's Public Document Room. If this report contains any information that you (or your contractor) believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must include a full statement of the reasons on the basis of which it is claimed that the information is proprietary, and should be prepared so that proprietary information identified in the application is contained in a separate part of the document. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

signed

Walter G. Martin, Chief
Materials and Plant Protection
Branch

Enclosures:

1. Description of Violations
2. RO Inspection Report No. 70-82/73-04

bcc (w/encls):

RO Chief, FS&EB (2)

RO:HQ (4)

L:D/D for Fuels and Mat's

PDR

NSIC

RO Files

DR Central Files

State of Massachusetts (1 w/encls)

OFFICE					
SURNAME					
DATE					

ENCLOSURE 1

Description of Violations

Nuclear Metals, Incorporated
2229 Main Street
Concord, Massachusetts 01742
Docket No. 70-82
License No. SNM-65

A certain activity under your license appears to be in violation of AEC requirements. The apparent violation listed below is considered to be of Category II severity.

1. 10 CFR 70.24(a)(2), "Additional requirements", requires in part that each licensee shall, "Maintain comprehensive emergency, procedures in each area in which special nuclear material subject to such license is handled, used or stored to assure that all personnel withdraw to an area of safety upon sounding of the alarm".

Contrary to this requirement, comprehensive emergency procedures were not maintained in areas where licensed material is handled, used, or stored.

A certain activity under your license appears to be in violation of AEC requirements. The apparent violation listed below is considered to be of Category III severity.

2. 10 CFR 19.11, "Posting of notices to workers", requires in paragraph (a) that "Each licensee shall post current copies of the following documents: (1) The regulations in this part and in Part 20 of this chapter; (2) the license, license conditions, or documents incorporated into a license by reference, and amendments thereto; (3) the operating procedures applicable to licensed activities; (4) any notice of violation involving radiological working conditions, proposed imposition of civil penalty, or order issued pursuant to Subpart B of Part 2 of this chapter, and any response from the licensee".

Contrary to this requirement, none of the above documents had been posted.

U. S. ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION I

RO Inspection Report No.: 70-82/73-04

Docket No.: 70-82

Licensee: Nuclear Metals, Incorporated

License No.: SNM-65

2229 Main Street

Priority: 1

Category: A(1)

Location: Concord, Massachusetts

Type of Licensee: Fuel Fabricator

Type of Inspection: Routine, Unannounced

Dates of Inspection: November 15-16, 1973

Dates of Previous Inspection: September 24-25, 1973

Reporting Inspector: W. W. Kinney
W. W. Kinney, Fuel Facilities Inspector

12/7/73
Date

Accompanying Inspectors: NONE

Date

Date

Other Accompanying Personnel: NONE

Reviewed By: H. W. Crocker

H. W. Crocker, Senior Inspector, PROJECTS
AND TECHNICAL SUPPORT SECTION

12/7/73
Date

SUMMARY OF FINDINGS

Enforcement Action

- A. Violation - Failure to maintain comprehensive emergency procedures in the areas used in manufacture of CP-5 fuel tubes in accordance with 10 CFR 70.24 (a)(2). (Details, Paragraph 5.b.)
- B. Violation - Failure to post notices to workers as required in 10 CFR 19.11. (Details, Paragraph 6.)

Licensee Action on Previously Identified Enforcement Items

The below items were subjects of the October 18, 1973 letter from Region I of Regulatory Operations to Nuclear Metals, Inc. (Details, Paragraph 4.)

A. Criticality Monitor Coverage

The licensee is removing the special nuclear material from the laboratory in Building A which was more than 120 feet from a criticality monitoring device. This will be done by November 30, 1973. (Details, Paragraph 4.a.)

B. Evacuation Drills

The licensee held a criticality accident drill on October 12, 1973. (Details, Paragraph 4.b.)

C. Criticality Safety Limit Violation

The licensee reports that the criticality safety limit of keeping fissile material more than three feet from the exclusion area boundaries has been discussed with the concerned operating personnel. The licensee also states that they are putting reminder notes about this criticality safety limits in the operating procedures. (Details, Paragraph 4.c.)

Design Changes

Not inspected

Unusual Occurrences

None

Other Significant Findings

A. Current Findings

Nuclear Metals, Inc. will make the final shipment of CP-5 fuel tubes to Argonne National Laboratory in early December 1973. They have no future fabrication activities scheduled for use of License No. SNM-65. Nuclear Metals will request termination of this license. (Details, Paragraph 3.)

B. Status of Previously Reported Unresolved Items

None

Management Interview

At the conclusion of the inspection, a management discussion meeting was held at 3:00 pm on November 16, 1973. Those present were:

Nuclear Metals

R. A. Robie, Business Manager
A. R. Gilman, Criticality Officer and Radiation Safety Officer
R. C. Franks, Health and Safety Officer

AEC

W. W. Kinney, Fuel Facilities Inspector

A. Scope and Violations

The scope of the inspection was presented. The two violations of AEC requirements previously documented in this report were discussed. (Details, Paragraphs 5.b. and 6.)

B. Criticality Safety Limit Violation

Licensee actions and considerations to prevent the recurrence of the violation of the criticality safety limit of fissile material not being stored closer than three feet from exclusion area boundaries were discussed. (Details, Paragraph 4.c.)

C. Provisions for Personnel Surveys

The actions to provide an alpha frisker for personnel to perform personal surveys prior to eating or leaving the facilities were discussed. (Details, Paragraph 12.)

D. Emergency Procedures and Supplies

The licensee's concern that the emergency procedures need review and revision was discussed. The poor condition of the emergency supplies was mentioned by the inspector. (Details, Paragraphs 5.a. and 5.c.)

DETAILS

1. Persons Contacted

A. R. Gilman, Director of Quality Assurance, Criticality Officer and
Radiation Safety Officer
R. C. Franks, Health and Safety Officer
R. F. Huber, Project Engineer
P. J. Zagarella, Nuclear Control Monitor

2. Organization

The Nuclear Metals management reporting to Mr. W. B. Tuffin, President, has been realigned. Mr. A. R. Gilman is now Director of Quality Assurance instead of being Manager of Engineering. Mr. P. Loewenstein is now Technical Director and Manager of Engineering. Mr. R. A. Robie is Business Manager. Mr. B. MacKay is still the Manufacturing Manager.

3. Scope of Operations

Nuclear Metals, Inc. will make the final shipment of CP-5 fuel tubes to Argonne National Laboratory in early December 1973. They have no future fabrication activities scheduled for use of License No. SNM-65. Nuclear Metals will be performing the actions necessary to terminate the license.

4. Licensee Action on Previously Identified Enforcement Items

The topics discussed below were subjects of the letter dated October 18, 1973, from Region I of Regulatory Operations to Nuclear Metals, Inc.

a. Criticality Monitor Coverage

The licensee is removing the special nuclear material from the laboratory in Building A which was more than 120 feet from a criticality monitoring device. This is to be accomplished by November 30, 1973.

b. Evacuation Drills

The licensee held a criticality accident drill on October 12, 1973. A fire drill was held on October 10, 1973.

c. Criticality Safety Limit Violation

The licensee reports that the criticality safety limit of keeping fissile material more than three feet from the exclusion area boundaries has been discussed with the concerned operating personnel. Also, the licensee is going to put reminder notes about this criticality safety limit in the operating procedures. Appropriate disciplinary action for violation of this criticality safety limit is being considered. Means of establishing and marking the exclusion area boundaries to provide easier compliance with the criticality safety limit are also being considered.

5. Emergency Procedures and Supplies

a. Emergency Procedures

The nuclear emergency procedures currently in effect were approved in May 1971. The Safety Officer feels the procedures are in need of review and revision to reflect the current safety philosophy and practices at Nuclear Metals. The procedures appear to be satisfactory if they were properly implemented.

b. Posting of Procedures

The emergency procedures were not readily available to operating personnel for their study and understanding. The requirement of 10 CFR 1024(a)(2) to maintain comprehensive emergency procedures in each area in which special nuclear material is handled, used, or stored was not met by the licensee. Emergency procedures were available in the office area and the guard station.

c. Emergency Supplies

The emergency supplies called for in the nuclear emergency procedures were not well stocked. The protective clothing called for was in short supply. The self-contained breathing apparatus specified for use by re-entry personnel was not available with the other emergency supplies.

6. Posting of Notices to Workers

The licensee had not made the postings called for in 10 CFR 19.11. The fact that 10 CFR 19 had been published and became effective September 17, 1973 was pointed out to the licensee.

7. Criticality Monitoring System

The alarm points on the five criticality monitoring detectors were set at 10 mr/hr. All the instruments appeared to be sensing radiation properly. The system installed is out of production as far as the manufacturer is concerned and additional detectors cannot be added to the system. This was one of the reasons for the decision to remove the fissile material from the laboratory in Building A which was greater than 120 feet from a detector. After the licensee removes all the enriched uranium from the facility in early 1974 there will be no requirement for the criticality monitoring system.

8. Ventilation System

a. Licensee Inspection

The licensee and a ventilation consultant inspected the ventilation ductwork during October, as required by the license, and found the system to be clean. The flow of air was also measured and adjusted as needed during the inspection.

b. Hood in Butler Building

The licensee elected to cease operations in the hood in the Butler Building since no sampler existed to sample the filtered exhaust air. The licensee is considering the installation of the air sampler on the hood exhaust system.

9. Audits and Equipment Inspection and Tests

a. Audits

The memoranda concerning the audits of the facilities by the criticality officer during September and October were reviewed by the inspector. During September two violations of the critical safety limit that special nuclear material is not to be stored closer than three feet from an exclusion area boundary were found. The criticality officer discussed the violations with operating personnel. During October no criticality safety limits were noted by the criticality officer.

b. Tests of Emergency Generator

The power operator started performing the weekly tests of the emergency diesel generator on October 24, 1973. A new power operator is being trained in the functions he is to

perform, and the tests were not performed for a relatively short period of time.

c. Fire Extinguisher Inspection

A consultant performed the inspection of five extinguishers for mechanical defects and physical location in October as required by the license. The fire extinguishers were inspected by the inspector and each had a tag giving the date of the inspection. The locations of the extinguishers is not exactly as given in the license. The locations have been changed to better suit the present fire protection needs of the facility, according to the licensee.

10. Operating Procedures

The operating procedures used for manufacture of the CP-5 fuel tubes were reviewed. The procedures referenced the May 22, 1972 memorandum from the criticality consultant with the subject "Safe Handling Limits in Fabrication of CP-5 Fuel Elements". According to the licensee, each operator has his own copy of that memorandum. The procedures are designed to produce fuel elements meeting specifications. There is little evidence of safety considerations in the procedures.

11. Safety Committee

The safety committee membership has been expanded to include three men from the manufacturing floor and one woman from accounting. The licensee hopes the committee will have increased vitality and worker interest by this approach.

12. Evaluation and Control of Personnel Radioactive Contamination

The licensee plans to place an alpha frisker at the Guard Area for personnel use prior to leaving and entering the lunchroom to eat. The use of the survey instrument will be explained to personnel in the Quarterly Radiation Safety Review meeting scheduled for the week of November 26, 1973. A company-wide memorandum on the subject will also be issued. The licensee intends that all persons handling uranium will perform personal alpha surveys prior to entering the cafeteria and before leaving the plant after the training meeting.