



NUCLEAR METALS, INC.

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May 15, 1973

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Region I  
970 Broad Street  
Newark, New Jersey 07102

Attention: Mr. James P. O'Reilly, Director

Reference: DOCKET NOS. 70-82; 40-672  
YOUR LETTER RECEIVED 25 APRIL 1973

Gentlemen:

This letter is in response to those items specified in your letter of 23 April 1973 which appeared to be in violation with AEC requirements. Before detailing the reply to these items, let me take this opportunity to thank your Mr. Nelson and Mr. Smith for their assistance to us during their visit to our facility on 21 March 1973.

ENCLOSURE NO. 1:

"1. Condition 8 of both licenses requires that material be possessed and used in accordance with procedures submitted with your license application dated February 26, 1969. Section II of these procedures is entitled 'Health and Safety'. It specifies, among others, the requirements shown below:

- a. Quarterly meetings and training sessions will be held to acquaint the fire brigade members with proper emergency procedures, techniques, and equipment.

Contrary to this requirement, you failed to hold these meetings and training sessions during the third and fourth calendar quarters of 1972."

A139

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Attention: Mr. James P. O'Reilly  
May 15, 1973  
Page 2.

CORRECTIVE ACTION TAKEN

First Quarter 1973 meeting was held on 1/05/73.  
Second Quarter 1973 meeting was held on 4/10/73.

Minutes of the above meetings were duly recorded and logbook established for future meetings.

TO AVOID FUTURE VIOLATIONS

A master time schedule/calendar has been established by the Safety Engineer as a most necessary working tool and control document for our entire Safety Program. This schedule is reviewed weekly by Mr. Robie, our Director of Administration, for compliance by the Safety Engineer, and to authorize the allocation of resources needed to stay on schedule.

A meeting was held with Chief Tombeno, of the Concord Fire Department, wherein the Chief has volunteered the services of some of his highly-trained men who will attend our Quarterly meetings, at our request, for purposes of training. Special interim meetings may be held for this purpose.

Our next Quarterly meeting is scheduled for 7/20/73.

FULL COMPLIANCE WILL BE ACHIEVED

Our schedule for full compliance will be the Fourth Quarterly meeting of 1973.

"b. Periodic health and safety meetings will be conducted for all employees.

Contrary to this requirement, no such meetings were held between August 1, 1972 and March 14, 1973."

CORRECTIVE ACTION TAKEN

As a matter of routine, all new employees are briefed on arrival to the first day of work by the Safety Engineer. Our Safety Program is described and mutual responsibilities are discussed at this time. Safety literature and film badges are distributed.

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Attention: Mr. James P. O'Reilly  
May 15, 1973  
Page 3.

If a new employee has been hired to work on enriched material programs, the Safety Engineer will escort him to our Radiation Safety Officer for further intensive briefing in radiation safety.

TO AVOID FUTURE VIOLATIONS

Special group meetings will be held before May 25, 1973, in order to discuss special problems and control mechanisms which pertain to specific operations. These meetings will be conducted by the Radiation Safety Officer. The special groups are as follows:

- (i) Enriched program fabrication personnel,
- (ii) Foundry and Machine Shop support personnel,
- (iii) Extrusion press support personnel.

Thereafter meetings of the above groups will be held periodically.

A company-wide meeting will be held by the Safety Department on June 15, 1973, in order to re-acquaint all personnel as a group, to our total program, and to discuss mutual responsibilities.

Future company-wide meetings will be held periodically.

FULL COMPLIANCE WILL BE ACHIEVED

June 15, 1973.

"c. Hoods and sucker hoses will be given periodic operational checks.

Contrary to this requirement, no check of hoods or sucker hoses were made between December 14, 1971 and March 14, 1973."

CORRECTIVE ACTION TAKEN

Although such tests were made during the period above, they were not properly documented and recorded.

Future tests will be properly documented.

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Attention: Mr. James P. O'Reilly  
May 15, 1973  
Page 4.

TO AVOID FUTURE VIOLATIONS

Our master schedule/calendar will insure that periodic tests are taken and recorded. Next test is scheduled for June 14, 1973.

FULL COMPLIANCE WILL BE ACHIEVED

June 14, 1973.

- "d. Direct measurement surveys will be made periodically at specified stations in well travelled areas with gas proportional counters and the results of these surveys will be recorded.

Contrary to this requirement, no such surveys were performed from December 14, 1971 to March 14, 1973."

CORRECTIVE ACTION TAKEN

Surveys were performed during the above period, but were not properly recorded on log sheets.

Past practice has been to take readings and record them on implant smear envelopes which are then submitted to our consultant for analysis. These readings are necessary for his calculations. These envelopes are destroyed after the analysis and report is completed.

TO AVOID FUTURE VIOLATIONS

A new log sheet has been established which will itemize all readings taken. We will also continue to record readings on smear envelopes.

FULL COMPLIANCE WILL BE ACHIEVED

June 4, 1973.

- "e. Filters from the stack air monitoring samplers will be collected monthly and analyzed to assure compliance with requirements of 10 CFR 20.106 'Concentrations in effluents to unrestricted areas.'

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Attention: Mr. James P. O'Reilly  
May 15, 1973  
Page 5.

Contrary to this requirement, your air sample filters were collected and analyzed only once between March 29 and August 16, 1972."

CORRECTIVE ACTION TAKEN

Stack air monitoring samples have been taken, analyzed, and recorded each month since 8/16/72. Dates recorded are as follows:

9/27/72

10/26/72

11/29/72

12/28/72

2/01/73

3/02/73

4/02/73

5/02/73

TO AVOID FUTURE VIOLATIONS

The Safety Department master schedule/calendar and weekly review will insure that monthly samples are collected and analyzed.

FULL COMPLIANCE WILL BE ACHIEVED

September 27, 1972.

"f. Environmental water and soil samples will be collected and analyzed annually.

Contrary to this requirement, the only samples collected since November 10, 1970 were collected December 28, 1971 and these samples were not analyzed."

CORRECTIVE ACTION TAKEN

Samples taken 12/28/71 were analyzed and report submitted by our consultant on 4/18/73. Samples taken 3/20/73 were analyzed and report submitted by our consultant on 4/18/73.

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Attention: Mr. James P. O'Reilly  
May 15, 1973  
Page 6.

TO AVOID FUTURE VIOLATIONS

Samples taken 3/20/73 will be allocated as a 1972 requirement. We will take another sample in September, 1973 to be allocated to 1973.

Our master schedule/calendar will control future compliance.

FULL COMPLIANCE WILL BE ACHIEVED

October 20, 1973.

ENCLOSURE NO. 1:

- "2. 10 CFR 20.201(b), 'Surveys', requires you to make such surveys as may be necessary for you to comply with all sections of Part 20.

Contrary to this requirement, you failed to survey individuals to determine that they were free of contamination before eating, smoking or leaving the plant."

CORRECTIVE ACTION TAKEN

As a matter of company policy for many years, all employees have been given a five minute clean-up period before the lunch break, and before quitting time. This policy remains in effect.

New "NO SMOKING" signs are on order and will be posted appropriately, accompanied by a reaffirmation of company policy on the subject.

We have ordered a new electronic "frisking" device, as specified by our radiation consultant, to suit our needs. The unit is a Model RM-15-Radiation Monitor with Alpha Scintillation Probes -- Model AC-3B.

This unit will be installed at our employees' entrance in Building B, which is also near the factory first floor washroom. The unit will be available at all times during work hours to allow for self-analysis before coffee breaks, lunch periods, and a final check on the way home for factory and engineering personnel.

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Attention: Mr. James P. O'Reilly  
May 15, 1973  
Page 7.

TO AVOID FUTURE VIOLATIONS

Supervisors and foremen will continually remind all employees of the necessity of compliance with radiation policy, and our Safety Engineer will insure that our new equipment is understood and used religiously. Compliance will be monitored periodically by the Safety Engineer.

FULL COMPLIANCE WILL BE ACHIEVED

June 29, 1973.

ENCLOSURE NO. 2:

- "1. 10 CFR 20.201(b), 'Surveys', requires that surveys be conducted as may be necessary to comply with the regulations contained in each section of Part 20. A 'survey', as defined in Paragraph 20.201(a), means 'an evaluation of the radiation hazards incident to production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, such evaluation includes a physical survey of the location of materials and equipment, and measurements of levels of radiation or concentrations or radioactive materials present'.
- a. Contrary to this requirement, you failed to make such surveys as were necessary to assure that employees at risk of exposure to airborne uranium-238 were not exposed to concentrations exceeding those specified in 10 CFR 20.103, 'Exposure of individuals to concentrations of radioactive material in restricted areas'. You did make surveys that were intended to achieve this objective but these surveys did not measure the airborne concentrations in the workers' breathing zones."

CORRECTIVE ACTION TAKEN

Our method of continuous implant monitoring as described in our license application has been in effect for several years. Our sampling heads are located from six to eight feet above the floor, and sample air just above the breathing level of personnel.

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Attention: Mr. James P. O'Reilly  
May 15, 1973  
Page 8.

TO AVOID FUTURE VIOLATIONS

Program of air monitoring will continue, under new schedule/calendar control. Special air samples will be taken during June to provide data for correlation with normal sampling stations. This will be done periodically with portable air samplers.

FULL COMPLIANCE WILL BE ACHIEVED

June 29, 1973.

- "b. Contrary to this requirement, you failed to make such surveys as were necessary to assure compliance with 10 CFR 20.106, 'Concentrations in effluents to unrestricted areas', a regulation that limits the yearly average concentration of uranium-238 contained in the liquids discharged from your plant to the unrestricted areas. Specifically, no surveys were made of liquid wastes, resulting from the dissolution of copper from uranium-238, prior to its disposal to a bog on your property."

CORRECTIVE ACTION TAKEN

Our inplant plumbing system directs all liquid wastes to our acid house disposal area. Our two-tank system allows the treatment of wastes prior to dumping in the bog at the rear of the disposal facility. Samples of the contained effluent are taken as the waste is treated from an acid to an alkaline condition. This is achieved by adding lime in sufficient amount to accomplish the appropriate PH reading.

Under this method, uranium content in the effluent is precipitated, and remains on the bottom of the holding tank. The tanks are flushed, on reaching the proper PH level, above the level of precipitates.

We will take additional samples for analysis to supplement our normal PH tests.

TO AVOID FUTURE VIOLATIONS

No dumping can take place without the approval of the Safety Department, after appropriate analyses have been made.



FULL COMPLIANCE

At the time of the next acid tank flush, expected to be in November, 1973.

- "c. Contrary to this requirement, you failed to make such surveys as were necessary to assure that the exposure incurred by an individual, whose film badge had been contaminated for each month of the first calendar quarter of 1972, was correctly recorded as required by 10 CFR 20.401(a) 'Records of surveys, radiation monitoring, and disposal'."

CORRECTIVE ACTION TAKEN

Film badges of specific personnel are being monitored, by smear tests, prior to being sent to our analysis contractor. Employee work habits, relative to the handling of film badges, are being watched, and recommendations are being made, which should eliminate those occurrences which would cause a film badge to become contaminated by an unusual method. It is believed that improper badge handling caused the unusual readings that occurred during that quarter.

TO AVOID FUTURE VIOLATIONS

The results of each monthly sample will be recorded and analyzed as required.

FULL COMPLIANCE WILL BE ACHIEVED

July 15, 1973.

- "2. 10 CFR 20.203(b), 'Caution signs, labels, signals and controls', requires that each radiation area be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words, 'Caution - Radiation Area'. A 'Radiation Area' is defined in Part 20 as any area accessible to personnel in which radiation exists, originating in whole or in part within licensed material, at such levels that a major portion of the body could receive in any hour a dose in excess of 5 millirems, or in any five consecutive days a dose in excess of 100 millirems.

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Attention: Mr. James P. O'Reilly  
May 15, 1973  
Page 10.

Contrary to this requirement, you failed to post the area in which you had collected approximately 20 radiographic shields made of depleted uranium. Our inspector measured an exposure rate of 8 millirems per hour at a distance of 2 feet from the collection of shields."

CORRECTIVE ACTION TAKEN

A yellow magenta rope and appropriate sign was placed around this holding area as required, 3 feet high and 3 feet removed from the material, on March 16, 1973.

TO AVOID FUTURE VIOLATIONS

More frequent inspections by the Safety Engineer will insure that new areas for holding source materials, will not develop without his knowledge, and, if necessary, take corrective action.

FULL COMPLIANCE WILL BE ACHIEVED

March 16, 1973.

- "3. 10 CFR 40.51, 'Transfer of source material' requires that you transfer source material only to: the Commission; to a specific or general licensee whose license authorizes him to receive such material; to any person exempt from the regulations of 10 CFR 40 to the extent permitted under such exemption; or as authorized by the Commission in writing.

Contrary to this requirement, you transferred non-exempt quantities of depleted uranium, without written authorization by the Commission, to customers without having determined that these customers were licensed to receive this material."

CORRECTIVE ACTION TAKEN

Letters and appropriate forms have been sent to all active and potential customers of depleted uranium products. These documents have requested customer certification of their license to receive such materials. These letters were sent out on 5/08/73.

United States Atomic Energy Commission  
Directorate of Regulatory Operations  
Attention: Mr. James P. O'Reilly  
May 15, 1973  
Page 11.

TO AVOID FUTURE VIOLATIONS

All new customers for source material products will be reviewed by Mr. Robie, our Director of Administration, at the time of bid or order placement. This review will include the checking of the "license certification file" for compliance by the new customer. If there is no certification on file, shipment will not be made until approval is received.

FULL COMPLIANCE SHOULD BE ACHIEVED

July 15, 1973.

- "4. 10 CFR 40.61(a), 'Records', requires that records be kept showing the receipt, transfer, export and disposal of source material.

Contrary to this requirement, your records of transfers and disposals were, in some instances, incomplete in that the quantities of material were not specified."

CORRECTIVE ACTION TAKEN

On 5/11/73 a new inventory control system was established in order to close the loopholes in the old system. Each month records of transfers of depleted uranium quantities will be made, and this will be reconciled quarterly with physical inventories of the material.

TO AVOID FUTURE VIOLATIONS

Activity will be scheduled and monitored under the master schedule/calendar control document.

FULL COMPLIANCE WILL BE ACHIEVED

August 31, 1973.

Very truly yours,

*Wilson B. Tuffin*

Wilson B. Tuffin  
President

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