



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

January 21, 1999

Docket No. 040-07102
EA No. 98-413

License No. SMB-743

Eric Jackson
President
Shieldalloy Metallurgical Corporation
West Boulevard
P.O. Box 768
Newfield, NJ 08344

SUBJECT: NOTICE OF VIOLATION
(NRC Inspection Report No. 040-07102/98-001)

Dear Mr. Jackson:

This letter refers to the predecisional enforcement conference (conference), conducted on October 1, 1998, at our Regional Office in King of Prussia, Pennsylvania relative to activities authorized by your NRC license. The conference was attended by you and other members of your organization and of your parent company, Metallurg, Inc., and by Mr. A. Randolph Blough and other NRC staff members. The conference enabled us to gain a better understanding of your position and completed and planned actions to correct seven apparent violations and concerns documented in Inspection Report No. 040-07102/98-001 which was sent to you on August 27, 1998. The Enforcement Conference Summary is enclosed.

Based on the information developed during the inspection, and the information provided at the conference, three violations of NRC requirements are being cited. The violations are described in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The violations involved: (1) transfer of control of the license without prior NRC approval; (2) failure to perform adequate surveys to assess the dose to workers and the potential contamination of equipment and soils; and (3) use of licensed material not authorized by the license (i.e., re-distribution). During the enforcement conference, you disagreed that the issues described in Items 1 and 2 were violations.

You disagreed with the first violation because "Shieldalloy Metallurgical Corporation is a separate corporate entity from Metallurg [parent company]" and "the transfer of Metallurg stock did not contemplate changes in licensed activities or changes in the availability of decommissioning funds." Despite your assertions, 10 CFR 40.46 requires that no license shall be transferred directly or indirectly, voluntarily or involuntarily, without the prior approval of the NRC. The licensee is a wholly-owned subsidiary of Metallurg, Inc. and all the outstanding stock of the parent corporation was transferred to a group of institutional investors; therefore, there was an indirect transfer of control of the license. Failure to provide the required notice deprived

the NRC of the opportunity to determine whether the transfer would adversely affect the availability of sufficient funds for decommissioning prior to the transfer. After having reviewed the transfer agreement between Metallurg, Inc. and Safeguard International, Inc., the NRC staff has determined that failure to notify the NRC of the transfer constituted a violation of NRC requirements.

You also disagreed with the second violation. The basis you presented for disagreeing with the violation was that the initial dose assumptions for workers were adequate, quarterly surveys performed in restricted areas indicated that facilities that were being demolished did not exhibit contamination in excess of the licensee's release criteria, and equipment brought into restricted areas did not become contaminated with licensed material from use in restricted areas. The demolition activities observed during the inspection included power-washing equipment, placing the power-washed equipment on the floor covered in crushed licensed material and then releasing the equipment to an unaffected and unrestricted area. Additionally, a review of the corrective action survey records for equipment and materials, that were previously free-released from a restricted area, indicated that there was both fixed and removable contamination on some of the materials in excess of the release criteria. From these activities and reviews, the NRC concludes that you should have performed surveys to: (a) ensure that equipment moved to unrestricted areas was free of contamination after placing the power-washed equipment on top of crushed licensed material; and (b) assess the potential intake and hand exposure to workers involved in power-washing activities and in handling the potentially contaminated equipment after placement on top of the crushed licensed material.

These three violations have been categorized individually at Severity Level IV in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions, "(Enforcement Policy), NUREG 1600. The NRC has concluded that information regarding the reason for the violation described in item 2 above and the corrective actions taken and planned to correct the violation and prevent recurrence is already adequately addressed on the docket in your letters dated July 31, August 11, and August 21, 1998 and in information provided in slides presented during the enforcement conference, with the clarification described in our letter dated August 25, 1998. Therefore, you are not required to respond to this violation unless the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to provide additional information, you should follow the instructions specified in the enclosed Notice. For the violations summarized in items 1 and 3 above, you are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. In your response, you should document the specific actions taken and any additional actions you plan to prevent recurrence. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. After reviewing your response to this Notice, including your proposed corrective actions and the results of future inspections, the NRC will determine whether further NRC enforcement action is necessary to ensure compliance with NRC regulatory requirements.

With respect to the apparent violation of License Condition 13 related to personnel monitoring during baghouse activities, the NRC has concluded that a violation of NRC requirements occurred. However, this non-repetitive, licensee-identified and corrected violation is being

E. Jackson
Shieldalloy Metallurgical Corporation

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treated as a non-cited violation in accordance with Section VII.B.1 of the Enforcement Policy. Additionally, the failure to conspicuously post the baghouse dust pile constitutes a violation of minor significance that is not subject to formal enforcement action.

With respect to the apparent violation regarding the timeliness of decommissioning for an inactive area of your facility that contained residual radioactivity, the NRC has concluded that no violation occurred based on the fact that the material excavated from the inactive area (Haul Road) was not licensed material. Nevertheless, we reviewed the survey records for the excavation that were provided during the enforcement conference and the post-remediation soil sample results that were provided to NRC in your memorandum dated October 13, 1998. The soil sample results met the release criteria for contaminated equipment and facilities. This area may be restored without the need for NRC confirmatory samples. However, during a subsequent inspection, we may examine the disposition of the excavated radioactive material and the concentration of radionuclides present in this material.

With respect to the apparent violation involving control of licensed material outside of your fence line, from our review of the data submitted and from comparison with site-specific release criteria using the methodology described in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), the results do not appear to meet the site-specific release criteria. Therefore, you should prepare a formal request, including data to support the release of the affected area outside of your fence line, and submit the request to the Fuel Cycle Licensing Branch for approval as a licensing action. We will review this matter during the next inspection. This does not preclude the NRC from taking enforcement action on this issue at a later date.

In accordance with Section 2.790 of NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter, the enclosures, and your reply will be placed in the Public Document Room (PDR).

Your cooperation with us is appreciated.

Sincerely,



George Pangburn, Director
Division of Nuclear Materials Safety

Enclosures:

1. Notice of Violation
2. Enforcement Conference Report No. 040-07102/98-002
3. Presentation Summary, Pre-Decisional Enforcement Conference, and Handouts

cc:

David R. Smith, Radiation Safety Officer

E. Jackson
Shieldalloy Metallurgical Corporation

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State of New Jersey

E. Jackson
Shieldalloy Metallurgical Corporation

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NOTICE OF VIOLATION

Shieldalloy Metallurgical Corporation
Newfield, NJ

Docket No. 040-07102
License No. SMB-743
EA No. 98-413

During an NRC inspection conducted on July 27-28, 1998, three violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy), NUREG-1600, the violations are listed below:

- A. 10 CFR 40.41(b) requires, in part, that neither the license nor any right under the license shall be assigned or otherwise transferred in violation of the Atomic Energy Act.

10 CFR 40.46 requires, in part, that no license shall be transferred, voluntarily or involuntarily, directly or indirectly, through transfer of control of any license to any person, unless the Commission shall, after securing full information, find that the transfer is in accordance with the provisions of the Atomic Energy Act, and shall give its consent in writing.

Contrary to the above, as of July 13, 1998, the licensee's parent company, Metallurg, Inc., was acquired by a group of institutional investors and the Commission had not been notified of this acquisition.

This is a Severity Level IV violation (Supplement VI).

- B. 10 CFR 20.1501 requires that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present.

Pursuant to 10 CFR 20.1003, *survey* means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation.

Contrary to the above, as of July 27, 1998, the licensee did not make reasonable surveys to:

1. assure compliance with 10 CFR 20.1201, which limits radiation exposure to occupational workers; and
2. evaluate the extent of radiation levels, the concentration or quantities of radioactive material, or the potential radiological hazards that could be present on equipment released from a restricted area.

Specifically, the occupational exposure to demolition workers performing activities within a restricted area, Department 102, was not assessed. Additionally, the licensee, after conducting surveys of potentially contaminated equipment, powerwashed the equipment,

placed the powerwashed equipment on the ground covered in dust with an exposure rate of approximately 1 mR/hr and then released the equipment to an unrestricted area without resurveying.

This is a Severity Level IV violation (Supplement IV).

- C. 10 CFR 40.41(c) requires, in part, that each licensee confine its use of licensed material to the purposes authorized by the license.

Condition 10 of License No. SMB-743 requires, in part, that licensed material be used incident to the processing of raw materials to produce specialty alloys and slag fluidizers.

Contrary to the above, from May 8 to 18, 1998, the licensee did not limit its use of licensed material incident to the processing of raw materials to produce specialty alloys and slag fluidizers. Specifically, the licensee received approximately 150,000 kilograms of tantalite and coltan, containing greater than 0.05% by weight thorium and uranium, for re-distribution to another NRC licensee.

This is a Severity Level IV violation (Supplement VI).

The NRC has concluded that information regarding the reason for the violation described in Item B, the corrective actions taken and planned to correct the violation and prevent recurrence and the date when full compliance will be achieved is already adequately addressed on the docket in letters dated July 31, August 11, and August 21, 1998 and in information provided in slides presented during the enforcement conference, with the clarification described in our letter dated August 25, 1998. However, you are required to submit a written statement or explanation pursuant to 10 CFR 2.201 if the description therein does not accurately reflect your corrective actions or your position. In that case, or if you choose to respond, clearly mark your response as a "Reply to a Notice of Violation," and send it to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the Regional Administrator, Region I, within 30 days of the date of the letter transmitting this Notice of Violation (Notice).

With regard to Items A and C and pursuant to the provisions of 10 CFR 2.201, Shieldalloy Metallurgical Corporation is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Regional Administrator, Region I, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not

Notice of Violation
Shieldalloy Metallurgical Corporation

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be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, any response which contests a violation shall be submitted under oath or affirmation.

Your response will be placed in the NRC Public Document Room (PDR); therefore, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. However, if you find it necessary to include such information, you should clearly indicate the specific information that you desire not to be placed in the PDR, and provide the legal basis to support your request for withholding the information from the public.

Dated at King of Prussia, PA

This 21st day of January, 1998

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

ENFORCEMENT CONFERENCE SUMMARY

Report No. 040-07102/98-002
Docket No. 040-07102
License No. SMB-743
Licensee: Shieldalloy Metallurgical Corporation
West Boulevard
Newfield, New Jersey 08344
Facility Name: Shieldalloy Metallurgical Corporation
Conference Date and Time: October 1, 1998 from 9:30 am to 12:30 pm
Conference Location: NRC Region I, King of Prussia, Pennsylvania

Inspectors:  12-16-98
Penny A. Lanzisera
Health Physicist
date

 12-16-98
Sattar Lodhi, Ph.D.
Health Physicist
date

 12-18-98
Marie Miller
Senior Health Physicist
date

Approved By:  12-30-98
John D. Kinneman, Chief
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety
date

CONFERENCE SUMMARY

Shieldalloy Metallurgical Corporation
NRC Enforcement Conference Report No. 040-07102/98-001

A Predecisional Enforcement Conference was held on October 1, 1998, at the NRC Region I office in King of Prussia, Pennsylvania. The Conference was held to discuss the apparent violations identified during NRC Inspection No. 040-07102/98-001. Enforcement options available to the Commission were discussed. The meeting was open to the public.

During the conference, the licensee referred to several documents to support their presentation. The documents included slides entitled "Presentation Summary, Pre-Decisional Enforcement Conference" and 4 handouts to support various slides from the presentation. The handouts were labeled Slide 16, Slide 7, Slide 21, and Slide 7.

I. LIST OF PERSONS ATTENDING

Licensee

Eric Jackson, President, Shieldalloy Metallurgical Corporation
Nigel Morrison, Vice President and General Manager, Shieldalloy Metallurgical Corporation
Eric Schondorf, Vice President and General Counsel, Metallurg, Inc.
David R. Berz, General Counsel, Metallurg
David Smith, Radiation Safety Officer, Shieldalloy Metallurgical Corporation
James Valenti, Assistant Radiation Safety Officer, Shieldalloy Metallurgical Corporation
Jay Silberg, Consultant, Shaw Pittman
Carol Berger, Consultant, IEM

NRC

A. Randolph Blough, Director, Division of Nuclear Materials Safety
John D. Kinneman, Branch Chief, Nuclear Materials Safety Branch 2
J. Bradley Fewell, Regional Counsel
Daniel Holody, Chief, Technical Program Section, Office of the Regional Administrator
Louis Manning, Enforcement Specialist
Marie Miller, Senior Health Physicist
Penny Lanzisera, Health Physicist
Sattar Lodhi, Health Physicist
Dan E. Martin, Fuel Cycle Licensing Branch
Heather M. Astwood, Project Manager, Fuel Cycle Licensing Branch

II. SUMMARY

On October 1, 1998, a Predecisional Enforcement Conference was held at the NRC Region I Office in King of Prussia, Pennsylvania. The Conference was conducted to discuss the apparent violations identified during NRC Inspection No. 040-07102/98-001.

Mr. Blough welcomed the attendees and stated that the meeting was being held to provide the licensee an opportunity to: (1) discuss the events surrounding the apparent violations; (2) accept or deny the apparent violations; (3) provide corrective and preventive actions taken as a result of the apparent violations; and (4) provide any additional information that would enable the Commission to make an enforcement decision. Mr. Blough reviewed the potential violations and stressed the importance of the number of violations.

Mr. Jackson stated that Shieldalloy Metallurgical Corporation is committed to resolving and providing resources for issues raised by the NRC. Mr. Jackson also stated that Shieldalloy Metallurgical Corporation has been operating since 1952, when the site was purchased from a specialty glass company.

Performance of Surveys

Copies of slides for Shieldalloy Metallurgical Corporation's presentation on the apparent violations are attached. The discussion began with a review of the apparent violation related to performing adequate surveys to evaluate the potential radiation exposure to workers and to evaluate potentially contaminated equipment. Mr. Smith stated that the radiological conditions

in the area of concern were known based upon quarterly surveys performed of this and other areas, that a violation did not occur, and that a recurrent violation did not occur. The basis provided to support the assertion that the violation was not recurrent was that after the 1995 violation for failure to assess the radiation exposure of personnel, procedures were put into place to ensure performance of sufficient surveys to assess the potential exposure of personnel. Mr. Smith stated that these procedures were followed to perform the dose assessments for workers in Building D-102, but the procedures did not require written documentation of the surveys or assessments performed. Mr. Smith also stated that the procedures have been revised to include a formal and documented assessment of work conditions and potential exposures prior to work in a restricted area. Additionally, Mr. Smith stated that release surveys were performed in August of previously released material and equipment and no concerns with contamination were identified. The licensee provided the NRC with copies of the release surveys performed in August of equipment and material released from Building D-102. The inspectors reviewed the surveys, after the conference, noted that several items surveyed exceeded the licensee's release criteria, and identified the following deficiencies: 1) the minimum detectable activity for the instruments used was not documented; 2) removable contamination surveys were not conducted of various steel removed from the building and placed in the staging area; and 3) removable contamination surveys performed of steel plate placed in a roll-off container were compared to a limit of 600 disintegrations per minute per one hundred square centimeters (dpm/100 cm²) instead of the release criteria of 200 dpm/100 cm². The licensee should review the deficiencies noted above prior to release of the material for unrestricted use. Additionally, during the conference, the licensee provided a copy of the revised exposure assessment performed for Building D-102 demolition workers. The assessment included exposure contributions from direct radiation, inhalation, ingestion, and deposition on the skin. The exposure potential was calculated by the licensee to be approximately 66 millirem from direct exposure, inhalation and ingestion, and an additional 32 millirem from deposition on the skin. Following the conference, the inspectors reviewed the exposure assessment and concluded that the revised assessment was adequate, with the exception that the potential intake during demolition activities appears to indicate an exposure estimate of 90 millirem instead of 1.7 millirem. This analysis is based upon the threshold limit value provided by the American Conference Of Governmental Industrial Hygienists for particulate dust of 10 milligrams per meter cubed and the minimum detectable concentration reported by the licensee for air monitoring of 5 E-13 microcuries per milliliter. The licensee should consider the above during future exposure evaluations.

Transfer of Parent Company

Mr. Berz discussed the potential violation associated with the transfer of the parent company, Metallurg, Inc. Mr. Berz stated that approximately 1.6 million dollars for financial assurance for Shieldalloy Metallurgical Corporation, with approximately 750,000 dollars plus for the Newfield site, is held by the NRC for financial assurance. The transfer was described as an acquisition of Metallurg, Inc. stock by Metallurg Holdings, Inc., a corporation owned by a group of investors. Mr. Berz stated that this transfer did not affect the Shieldalloy license, no changes were made at Shieldalloy, there was no diminishing of the Shieldalloy's financial circumstances, and that this did not constitute a violation of NRC regulations. Mr. Berz stated that both senior management at Shieldalloy and Metallurg have been notified of the NRC's regulations in this area and are committed to provide any information to the NRC on this issue for clarification. Mr. Kinneman questioned whether, given the transfer, Shieldalloy would be able to meet their license condition

requirement to have a decommissioning funding plan and appropriate financial assurance in place by October 1999. Mr. Berz responded that by October 1999, Shieldalloy will have a cost estimate and adequate funds available to decommission the site.

Decommissioning Timeliness Rule

Mr. Smith described the circumstances surrounding the apparent violation of the decommissioning timeliness rule for the Haul Road area. Mr. Smith stated that slag used in the roadway was not ferrocolumbium slag (i.e., licensed material) and that upon characterizing the area and performing significant excavation activities, the dose rates of material removed from the area were much lower than the dose rates that would be expected from licensed material. Mr. Smith stated that the excavated material was placed in the source material storage yard and that Shieldalloy currently plans to follow their release criteria for release of this material; however if Shieldalloy decides to dispose of the excavated material as non-radioactive material, the NRC would be notified. During the enforcement conference, the licensee provided copies of survey records from the Haul Road survey and excavation activities. These surveys were reviewed by the inspectors after the conference, however analytical data was not available to support a determination that material removed from the area is not licensed material. Therefore, based on the licensee's assertions that this area was not used for licensed activities and that the roadway was not re-enforced with licensed material, the NRC has concluded that this is not a violation. However, during the enforcement conference, the licensee agreed to provide the NRC with the soil sample results and leave the Haul Road area excavated pending review of the additional information by the NRC. In a memorandum dated October 13, 1998, the licensee provided the results from post-remediation soil samples collected from the Haul Road area. The results indicated that the area met the licensee's release criteria for contaminated equipment and facilities; therefore, the NRC concluded that this area may be restored without the need for NRC confirmatory samples.

Control of Licensed Material

Mr. Smith described actions taken to resolve the apparent violation of licensed material located outside of Shieldalloy's fence line. Mr. Smith and Ms. Berger stated that the NRC's and EPA's sample results and the 1990 survey results to support the Environmental Assessment were reviewed. Ms. Berger stated that the results were compared to the release criteria in the Branch Technical Position for thorium and uranium and using the methodology described in Section 8.4.2 of MARSSIM. From this analysis, Ms. Berger stated that the analytical results do not exceed site-specific release criteria and are not representative of samples taken on Shieldalloy's property. This analysis was reviewed by the inspectors after the conference. The review indicated that the difference between the survey unit average and the reference area average exceeded the site-specific release criteria. Therefore, the licensee should further characterize this area, which is adjacent to a restricted area, and review areas of elevated measurements.

Personnel Monitoring During Baghouse Activities

Mr. Smith discussed the apparent violation of License Condition 13 related to personnel monitoring during all baghouse activities. Mr. Smith acknowledged the licensee's failure to perform the monitoring during the first shift and described the corrective actions taken by the licensee to correct this oversight, which included training of the maintenance foreman and the workers involved, addition of the maintenance foreman to the Radiation Safety Committee, and

exposure evaluation of all workers involved. Mr. Smith stated that this issue was identified by the licensee and that corrective actions to re-train maintenance workers and perform exposure evaluations of workers involved were implemented at the time of the inspection. This non-repetitive, licensee-identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy.

Posting

Mr. Smith discussed the apparent violation of posting requirements and acknowledged the licensee's failure to conspicuously post the baghouse dust pile. Mr. Smith described the licensee's corrective actions which included reposting the area immediately, adding additional signs in the vicinity of the baghouse dust pile, and including a requirement to document that each posted location was checked and confirmed to have the proper posting during quarterly surveillance efforts. Upon consideration of the safety significance of this violation, the NRC concluded that this failure constitutes a violation of minor significance and is not subject to formal enforcement action.

Authorized Use of Licensed Material

Mr. Smith discussed the apparent violation of License Condition 10 related to re-distribution of licensed material to another NRC licensee. Mr. Smith indicated that the apparent violation resulted from a misunderstanding of the license condition and stated that their understanding of the license condition allowed receipt of licensed material for transfer to another licensed recipient who would process the raw materials. Mr. Smith indicated that the licensee would be willing to clarify this issue as part of their license amendment application currently under review by the NRC.

The Enforcement Officer explained the enforcement options available to the Commission.

Mr. Blough closed the meeting by acknowledging the licensee's proposal of corrective actions for all concerns raised in the inspection report, regardless of whether the licensee agreed that the concern was a violation. Mr. Blough requested and the licensee's management agreed to notify the NRC if a decision was made not to implement corrective actions for any of the concerns addressed during this conference. Mr. Blough asked if the State of New Jersey representative in the audience, Ms. Jenny Goodman, had comments. Ms. Goodman indicated that the New Jersey cleanup standards for Naturally Occurring Materials of 15 millirem per year would need to be considered by the licensee and that New Jersey would need to review the survey data for Haul Road prior to closing the excavated site. The meeting was then adjourned.