40-7102

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

March 1, 1996

MEMORANDUM TO: Robert C. Pierson, Chief
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

THRU: Michael Tokar, Section Leader
Licensing Section 2
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

FROM: Gary C. Comfort, Jr.
Licensing Section 2
Licensing Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

SUBJECT: TRIP REPORT FOR PUBLIC MEETING IN NEWFIELD, NEW JERSEY, TO UPDATE PUBLIC ON LICENSING ACTIONS FOR SHIELDALLOY LICENSE, JANUARY 31, 1996

On January 31, 1996, I presented an update of the status of licensing actions for Source Material License No. SMB-743 held by Shieldalloy Metallurgical Corporation (SMC). The meeting began at 6:30 p.m. at the St. Rose of Lima Church in Newfield, New Jersey. This presentation was made in response to a request by the Newfield Residents Environmental Group (NREG) in a letter dated December 21, 1995. Ms. Marie Miller and Ms. Sheri Arrendondo, both from Region I, supported the presentation by presenting information and answering questions about regional activities at SMC. Representatives from the general public, state and local government, Senator Lautenberg's office, SMC, and the press attended the meeting.

The main topics covered in the presentations were: (1) a brief background of SMC's operations under their license; (2) a brief background of NRC's regulations relating to source material; (3) the status of NRC's licensing actions including the upcoming license renewal, EIS for *in situ* disposal, export permit application, and the latest revision of SMC's conceptual decommissioning plan; and (4) a description of regional activities and inspection results at the site. A copy of slides used during the presentations is attached. After the presentation, questions from the audience were answered.

The audience's main concerns related primarily to environmental sampling and worker exposures, including sampling methodology. Much of the audience was unsure how calculations of stack releases related to the potential accumulation of source material outside the site boundary; their main question dealt with why sampling was not normally done outside the site boundary. The

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staff explained that release criteria in 10 CFR Part 20 limit releases such that there should be no significant accumulation of such material with expected dispersion as long as the stack releases were within limits. With respect to worker exposures, members of the audience wondered why direct testing (such as bioassay) was not done instead of using breathing zone area monitors (BZAs). The staff stated that urine bioassay would not easily detect thorium and would likely detect uranium only after an exposure was above regulatory limits; therefore the BZAs were the most appropriate method of evaluating exposures. SMC did state that they planned to add a program of urine bioassays as a check of the BZA results.

Other significant issues of public interest included the desire to see the approval of the export permit application (as long as transportation offsite was considered safe) and SMC's updated conceptual decommissioning plan which requested the eventual offsite disposal of all source material at the site. Some members of the public also expressed an interest for a more local public document room (LPDR), rather than being required to go to the LPDR situated near local nuclear power facilities some 30 miles away. As such, NRC will provide copies of major licensing actions (environmental assessments, license and amendments, inspection reports, etc.) to the Newfield Public Library. Other general correspondence will continue to be available at the LPDRs.

The meeting ended approximately 9 p.m.

Attachment: Presentation slides

cc: Mr. C. Scott Eves
V.P., Environmental Services
Shieldalloy Metallurgical Corporation
P.O. Box 768
Newfield, New Jersey 08344

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Newfield, New Jersey 08344

(1)

United States Nuclear Regulatory Commissior

(2)

Status of Licensing Actions for Shieldalloy, Newfield, NJ, Facility

Newfield, New Jersey
January 31, 1996

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and Safeguards, NMSS
U.S. Nuclear Regulatory Commission
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TOPICS OF DISCUSSION:

1. Shieldalloy's Operations
2. NRC's Licensing Role
3. Status of Licensing Actions
   - A. License Renewal Process
   - B. The D&D EIS
   - C. Export License
   - D. Conceptual Decommissioning Plan
4. Activities in Region I

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HISTORY

1940's - Smelting and Alloy Production

1950's - Importation and Processing of Niobium Ore

1980 - Current NRC License Issued

1985 - Entered Timely Renewal

ATTACHMENT

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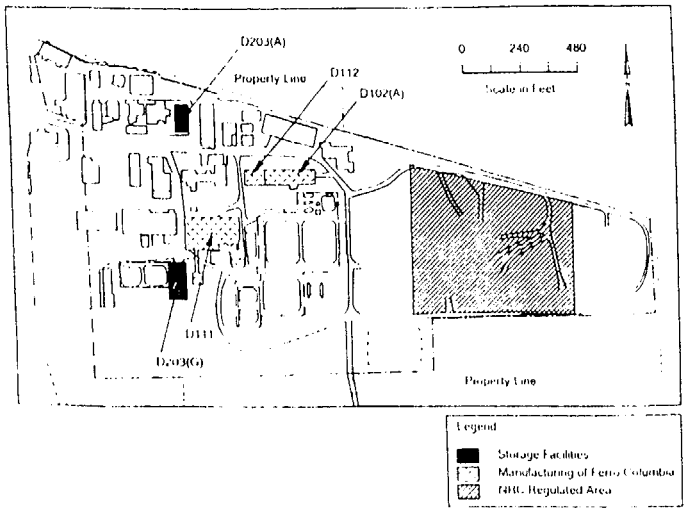

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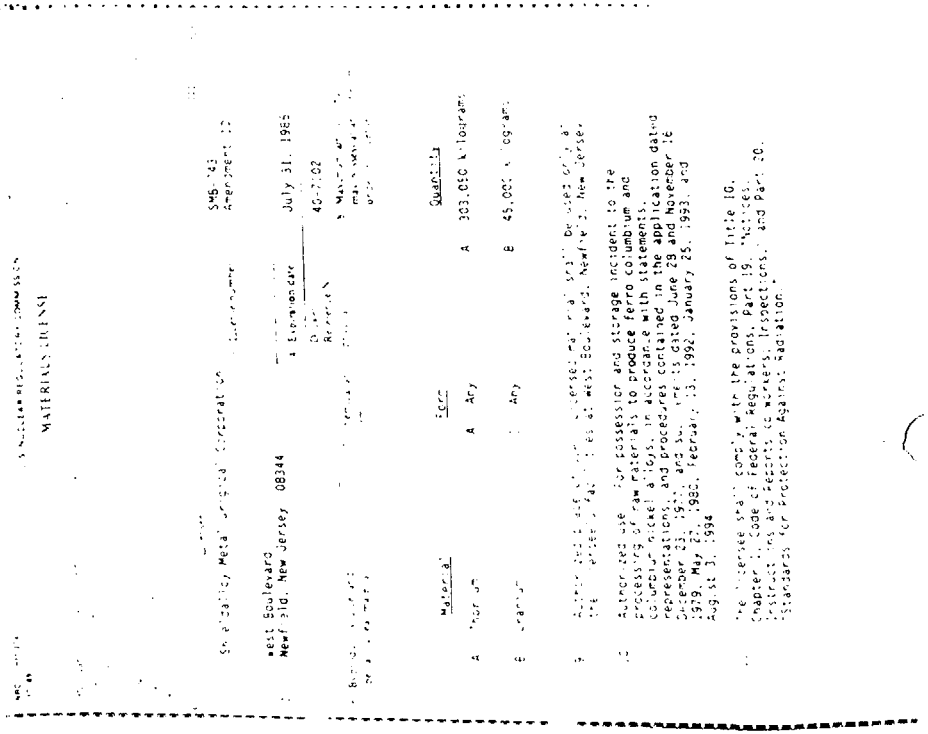

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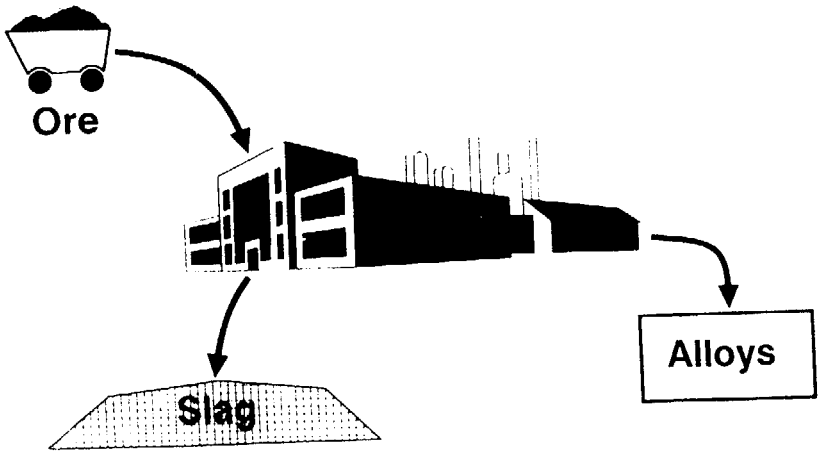
Shieldalloy Process



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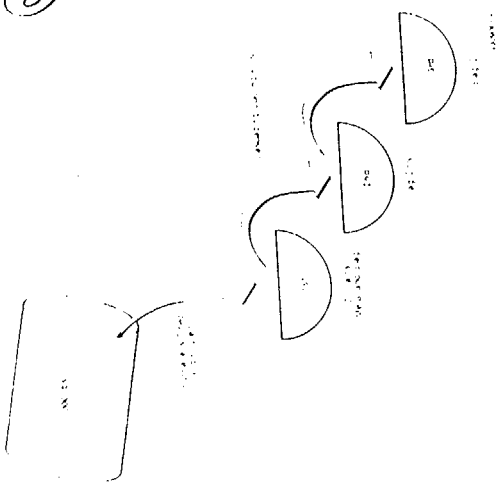

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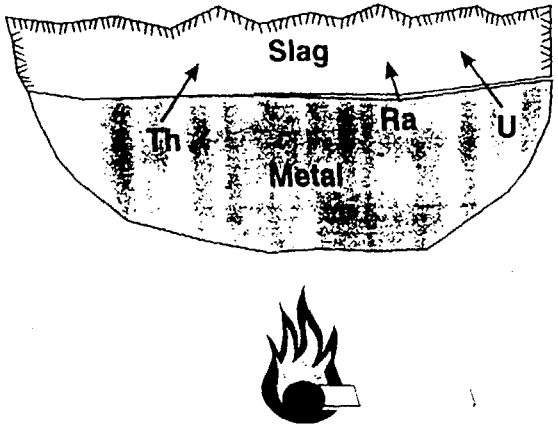
Melt Process



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SITE INVENTORY (JULY 1995)

	MASS (kilograms)	(pounds)
THORIUM	295,000	650,000
URANIUM	39,800	87,700

Total Volume of Slag ~20,000 m^3

Total Weight of Slag >100 million lbs.

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NRC's ROLE

To protect the safety of the public and the environment from the commercial use of byproduct, source, and special nuclear material

NRC Regulations are found in the Title 10 of the Federal Code of Regulations (10 CFR)

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10 CFR Part 40

NRC's regulations regarding source material are in 10 CFR Part 40

Establishes procedures and criteria for the issuance by the NRC of licenses to receive, possess, use, transfer and/or deliver source and byproduct material

Exempts persons who only possess source material but do not process or refine it

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SOURCE MATERIAL

Source material is defined as:

"(1) uranium or thorium, or any combination thereof, in any physical or chemical form or

(2) ores which contain by weight one-twentieth of one percent (.05 percent) or more of: (i)uranium, (ii) thorium or (iii) any combination thereof

Pyrochlore contains:

up to 2 percent thorium by weight

up to 0.4 percent uranium by weight

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THINGS TO CONSIDER

Numerous sands and soils in nature contain >0.05 percent by weight source material

- NRC doesn't license material because of impracticality
- Although not licensed, concentrations of natural material equal to concentrations of processed material would have same impact

10 CFR Part 40 developed using a strategic value

- Too difficult to extract uranium and thorium from ore below 0.05 percent by weight
- However, NRC revisiting to evaluate any health impacts

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LICENSING ACTIONS

License Renewal

D&D EIS

Export License Application

Conceptual Decommissioning Plan

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NRC DOCUMENTS ISSUED DURING RENEWAL

Environmental Assessment (EA)

Safety Evaluation Report (SER)

License

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CONTENTS OF EA

Describes Site and Proposed Action (License Renewal)

- current and proposed operations
- airborne, liquid, and solid effluents
- radiation protection program / environmental monitoring
- affected environment (demographics, geology, hydrology, meteorology, background, etc.)

Describes Alternatives

- Denial of License Renewal
- No Action (Continue in timely renewal)

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CONTENT OF EA (Cont)

Evaluates Proposed Action and Alternatives for normal operations and accidents

- human health and safety
- environment (including air quality and groundwater)
- energy and utility usage
- socioeconomics

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PRELIMINARY EA RESULTS

Maximally Exposed Individual receives total effective dose equivalent of no more than 23 mrem per year

- 100 mrem per year limit in 10 CFR Part 20
- Assumes
  - 100 percent occupancy
  - ground level release
  - more processing than normal per year
- Primarily from stack effluents
- Slag expected to not affect offsite individuals

Accident scenario (loss of contents of baghouse) results in 6 mrem

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AVERAGE ANNUAL INDIVIDUAL DOSES FROM NATURAL AND MAN-MADE RADIATION SOURCES (mrem)

Cosmic Rays	28
Terrestrial Gamma Rays	26
Nuclear Weapons Fallout	5
Building Materials (Masonry)	7
Air Travel	3
Television	1
Average Smoker	1300

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PRELIMINARY EA RESULTS (Cont)

No impact to groundwater from slag storage

- Based on leachability studies
- Historic measurements of groundwater

Air loading from dust below EPA limits

Alternatives show similar impacts over short-term

- License Denial would result in relocation of materials and thereby potential dust emissions
- No Action would be same as proposed

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Preliminary Safety Evaluation Results

Policy of "As Low as Reasonably Achievable" (ALARA)

Radiation Workers expected to receive no more than 400 mrem TEDE per year

- Assumes full-time work exposure
- Assumes no particular filtration from dust masks
- 100 mrem external, 300 mrem internal
- NRC limits workers to 5000 mrem per year

Worst accident of direct inhalation baghouse dust for 15 minutes results in less than 3 mrem per incident

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LICENSE ISSUANCE

Includes conditions of license

Would only permit incremental increases in possession limits until conceptual decommissioning plan approved

5 year renewal period

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In Situ Disposal EIS

April 1993	Shieldalloy submits Conceptual Decommissioning Plan for onsite disposal
Nov 1993	NRC Issued Notice to Prepare EIS
Dec 1993	Scoping Meeting near Newfield
July 1994	Scoping Report Issued
Dec 1994	Shieldalloy submits Export Application
Feb 1994	NRC indefinitely delays EIS

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CAMBRIDGE, OH EIS

Slag Problem Similar to Newfield

- Higher concentrations at Newfield
- Larger volumes at Cambridge
- Cambridge slag piles abut wetlands

EIS process began at same time as one for Newfield

Preliminary EIS states that minimal impacts expected

Draft EIS for public comment to be issued this Spring

DOES NOT MEAN THAT SAME RESULT WOULD BE OUTCOME OF EIS FOR IN-SITU DISPOSAL AT NEWFIELD

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EXPORT LICENSE APPLICATION

Dec 1994	Shieldalloy submitted export license application
Mar 1995	Trinidad requests additional info on radiation
June 1995	Shieldalloy provides such information with NRC comment
Sep 1995	Trinidad satisfied that no radiological impact, but asks about other environmental impacts
Oct 1995	Shieldalloy provides slag samples and list of labs to embassy
Latest	Trinidad has received results showing minimal leaching

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Export License Request

Process Expectations

- used as fluidizer and to remove impurities for steel
- dilution of material 3-6 times, further dilution to under NRC unrestricted limits expected when combined with iron ore slag
- success based on ferrovanadium slag use

Asks to export 40,000 pounds for trial shipment

- equivalent to one production run
- Shieldalloy would analyze results and confirm minimal radiological impact

Based on Results, Shieldalloy will submit general export license application

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CONCEPTUAL DECOMMISSIONING PLAN

Updated Plan submitted in December 1995

Proposes:

Export of Slag

Sale of Dust Piles (for lime content)

Offsite disposal of contaminated soils and structures

Division of Waste Management currently reviewing plan

If NRC does not allow sale/export of material, Shieldalloy will likely be forced to apply for in-situ disposal

- NRC would start EIS process from beginning

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United States
Nuclear Regulatory Commission

JANUARY 31, 1996

Sheri A. Arredondo
Health Physicist
Nuclear Materials Safety Division
USNRC Region I

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BACKGROUND

Region I: Who we are and what we do

Region I Responsibilities for Shieldalloy Metallurgical Corp.:

- **Routine Inspections (2 years)**
- **Special Inspections**

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ROUTINE INSPECTION NO. 040-07102/95-001
FEB. 15-27 and MARCH 6, 1995

- **Focus on radiation exposure of workers and members of the public**

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NOTICE OF VIOLATION

1) Failure to make an evaluation of worker doses

2) Failure to make an evaluation of doses to members of the public

3) Failure to develop an ALARA program for worker doses