

40-7102



SHIELDALLOY METALLURGICAL CORPORATION

RICHARD D. WAY  
SENIOR VICE PRESIDENT, MANUFACTURING

WEST BOULEVARD  
P.O. BOX 768  
NEWFIELD, NJ 08344  
TELEPHONE (609) 692-4200  
TWX (510) 687-8918  
FAX (609) 692-4017

January 7, 1992

Lance Miller, Assistant Commissioner  
State of New Jersey  
Department of Environmental Protection and Energy  
401 East State Street  
Trenton, New Jersey 08625

Richard E. Cunningham, Director  
Division of Industrial and Medical Nuclear Safety  
United States Nuclear Regulatory Commission  
Washington, D.C. 20555

RE: Shieldalloy Metallurgical Corp. (SMC),  
Ferrovanadium Slag Issues

Dear Gentlemen:

I am Shieldalloy Metallurgical Corporation's (SMC's) Senior Vice President, Manufacturing, responsible for the operation of SMC's Newfield, New Jersey facility. I want to thank both the Nuclear Regulatory Commission (NRC) and the New Jersey Department of Environmental Protection and Energy (NJDEPE) for the continued efforts to expedite the resolution of ferrovanadium (FeV) slag issues raised by the NJDEPE's Bureau of Environmental Radiation Protection. I also want to again stress how critically important a prompt resolution of those issues is to SMC, and its customer, National Recovery Systems, Inc. (NRS).

SMC has approximately 100,000 tons of FeV slag which SMC wishes to sell for reuse by the steel industry. This slag is produced by SMC's processing of vanadium ores and residues. Like many ores (and indeed most rocks and soils), the vanadium ore and residue, and hence the slag, contain minute traces of natural uranium and thorium, but the levels are so low that the material is generally considered to be nonradioactive as stated in our December 1977 Application for Source Material License. The levels of uranium and thorium are so low that the ore and FeV slag are not a regulated material under regulations of the NRC, are exempt from licensing under New Jersey's regulations, are not considered to be radioactive material under the U.S. Department of Transportation's regulations, and are hard to distinguish from the naturally occurring background levels in the environment.

2201080256 220107  
EIS AD00K 04007102  
C PDE

NFI

Currently, NRS is interested in purchasing this slag for reuse by the steel industry. This FeV slag is to be crushed, sized, dried, blended with other slag components and packaged by our customer. The final product will then be supplied to the steel industry as a substitute for materials that cost a least four times as much. There is, however, a limited window of opportunity to develop this market. If NRS cannot demonstrate that it has a dependable supply of the slag to enable it to fulfill its customers' requirements, it will lose existing orders for the slag and in all likelihood its market for that product. The cost benefit to our country's steel industry will be lost. And SMC, NRC and New Jersey will still have to resolve how to handle the 100,000 tons of slag that are stored on SMC's property in Newfield.

As we await NRC's response to the Department's letter of December 18, 1991, I thought it would be useful, for everyone concerned, to set forth in one place--this letter--SMC's understanding of where matters stand, and our position on the issues.

#### NJDEPE's Position

We understand that:

1. The Department is awaiting the NRC's response to the jurisdictional question posed in Robert Stern's December 18, 1991 letter to the NRC.
2. Depending on the NRC's response, the Department may accept the NRC's position, or it may contest it.
3. The Department wants to make sure that Indiana has no problem with NRS accepting the slag for their processes.
4. Radiation issues aside, the Department favors the concept of reusing the slag in the manner SMC is pursuing.

#### The NRC's Position

SMC has delivered to the NRC the same information it has submitted to New Jersey's Bureau of Radiation Protection, and SMC expects that the NRC will restate the position that it has earlier expressed, i.e.,

1. The FeV slag does not fall within NRC jurisdiction because the NRC is satisfied that no source material and no material contaminated with source material will leave the site in the form of FeV slag.
2. Even if the slag had become contaminated with some source material, the NRC would not be concerned with the use of the slag as an additive in the steel industry so long as the slag has not been appreciably contaminated with other materials having higher concentrations of radioactivity.

3. The NRC does not regard the shipment of this slag for the specified reuse to be "disposal".

SMC's Position

Based on the nature of the slag itself and the federal and state laws and regulations dealing with radioactive material, SMC's position is as follows:

1. Rigorous testing, sampling and recording procedures will insure that the FeV slag leaving the Newfield site for sale to NRS contains no measurable contamination by source material.
2. The slag is not subject to regulatory restriction by the NRC. Like the original vanadium ore, the FeV slag contains less than 0.05% uranium and thorium by weight and hence is excluded from the definition of "source material" regulation by the NRC. See 10 CFR § 40.4. Even if the traces of uranium and thorium were considered to be source material, they are below the "unimportant quantities" which the NRC has exempted and considers appropriate for incorporation into alloys. See 10 CFR § 40.13(a).
3. The FeV slag is not subject to New Jersey's jurisdiction because its radioactivity levels do not constitute "unnecessary radiation" as defined by the New Jersey Radiation Protection Act, N.J.S.A. 26:2D-2(c):

...the use or presence of electromagnetic radiation including microwave, infrared, visible, ultraviolet, X-ray, and gamma ray; sonic infrasonic, or ultrasonic waves; and particle radiation including alphas, betas, high energy electrons, neutrons, protons and other atomic or nuclear particles in such manner as to be or tend to be injurious or dangerous to the health of the people or the industrial or agriculture potential of the State, or to the ecology of the State and its wildlife (emphasis added).

4. Based upon the levels of radiation reflected in the information SMC has already furnished the NJDEPE, the FeV slag is exempt from New Jersey's licensing regulation pursuant to N.J.A.C. 7:28-4.3 (a) 5, which exempts "Naturally occurring radioactive materials of an equivalent specific radioactivity not exceeding that of natural potassium (10 [E-9] curies per gram of potassium)."
5. The radioactivity levels of the FeV slag (approximately 10 pico Curies per gram) are 200 times less than the levels (2,000 pico Curies per gram) at which, under U.S. Department of Transportation regulations, a material is considered radioactive. See, 49 CFR § 173.403(Y).

6. SMC and NRS's reuse of the slag does not constitute "disposal" under the New Jersey statute and regulations. The New Jersey disposal regulations, N.J.A.C. 7:28-11.1 et seq refer to disposal activities that fit within the Federal government's definition of disposal, both statute and regulation. See, 42 U.S.C. § 10101 (9) ("emplacement in a repository with no foreseeable intent of recovery"); 42 U.S.C. §2021b(7) ("permanent isolation"); and 10 CFR 61.2 ("isolation of radioactive wastes from the biosphere inhabited by man and containing his food chains by emplacement in a land disposal facility").
7. SMC's rigorous procedure for screening the FeV slag to assure that it is not contaminated with source material includes visual inspection, direct reading measurements, and isotopic analyses. The results of the isotopic analyses (already provided to your staffs) clearly support our position that the FeV slag is "nonradioactive" in the context of Federal and New Jersey statutes and regulations. SMC's documentation of this procedure and the results generated should provide sufficient evidence for either the NRC or NJDEPE that no appreciable amounts of source material leave our facility.

In summary, we think SMC has an excellent program for the reuse of more than 100,000 tons of FeV slag that is now located at its Newfield, N.J. facility, a program that will help solve the issue of solid waste management, aid our country's economy, and pose no measurable environmental or health effect to anyone.

The NRC has no regulatory concern about SMC's plan because they feel that SMC's pre-shipment screening will assure that the slag will have no appreciable contamination with source material; the slag's radioactivity levels are so low that the "man-in-the-street" would consider the slag to be non-radioactive; and the proposed reuse does not constitute "disposal". We feel that New Jersey should likewise have no regulatory concern because the NRC has thoroughly reviewed the matter and indicated its position. We also feel that the low levels of radioactivity take this slag outside New Jersey's jurisdiction because the FeV slag cannot be regarded as being "unnecessary radiation"; even if this slag were within its jurisdiction, the low levels of radioactivity exempt the material from regulation under New Jersey's rules.

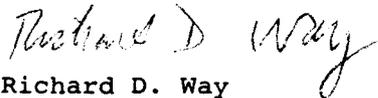
In short, SMC's and NRS's reuse of the slag is a "win-win" proposition for all concerned. It poses no harm to the public health or the environment. It solves a solid waste issue in New Jersey. It helps the U.S. steel industry's ability to compete because it furnishes a very cost effective raw material.

SMC therefore respectfully urges you and your respective agencies to continue to give this matter priority attention. We have already missed one shipment to our customer, and if we are unable to make a shipment by late January, there is a high probability that our relationship with our customer will be destroyed.

L. Miller (NJDEPE)/R. Cunningham (USNRC)  
January 7, 1992  
Page 5

SMC will meet with you at literally a minute's notice, should you desire it.  
In the meantime, please let us know if you require any further information.

Very truly yours,



Richard D. Way  
Senior Vice President, Manufacturing

RDW/lms

cc: Commissioner Scott Weiner, NJDEPE  
Mr. Bruce Venner, Chief, NJDEPE-BFCM-DHWM  
Mr. Kenneth W. Elwell, DAG  
Mr. Jerry J. Swift, USNRC  
Mr. Yawar H. Faraz, USNRC  
Mr. Robert Fonner, USNRC  
Mr. Jay E. Silberg, Esq., Shaw, Pittman, Potts & Trowbridge  
Mr. Charles L. Harp, Jr., Esq., Archer & Greiner