

May 12, 2006

David R. Smith  
Environmental Manager  
Shieldalloy Metallurgical Corporation  
Aluminum Products & Powders Division  
14 West Boulevard, P.O. Box 768  
Newfield, NJ 08344-0768

SUBJECT: SUMMARY OF THE MARCH 9, 2006 MEETING BETWEEN U.S. NUCLEAR REGULATORY COMMISSION STAFF AND SHIELDALLOY METALLURGICAL CORPORATION TO DISCUSS REVISION 1 OF THE DECOMMISSIONING PLAN FOR THE SHIELDALLOY SITE IN NEWFIELD, NEW JERSEY AND CONSIDERATION OF FINANCIAL ASSURANCE GUIDANCE

Dear Mr. Smith:

Enclosed is a meeting summary of the March 9, 2006, meeting between the U.S. Nuclear Regulatory Commission (NRC) staff and representatives of Shieldalloy Metallurgical Corporation (SMC) (Enclosure 1) to discuss the NRC comments that lead to rejection of Revision 1 of the Decommissioning Plan (DP) for the SMC site in Newfield, New Jersey.

A draft copy of this summary was provided to you for comment. Except for the discussion of Financial Assurance, I have incorporated your comments into this final version of the meeting summary. Your comments on the Financial Assurance discussion were excluded because they were not reflective of the actual discussion during the meeting. They were primarily reflective of additional thinking that occurred since the meeting. Pursuant to discussion at the meeting, the NRC considered your request to calculate the contribution to your decommissioning trust fund on the basis of a three percent discount rate, as suggested by NUREG/BR-0058, "Regulatory Analysis Guidelines of the NRC." The staff assessment is located in Enclosure 2.

In accordance with 10 CFR Part 2.790 of the NRC's "Rules of Practice," a copy of this letter will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). ADAMS is

accessible from the NRC website at <http://www.nrc.gov/NRC/ADAMS/index.html> (The Public Electronic Reading Room). If you have any questions regarding this letter, please call me at (301) 415-6664 or email me at [klk@nrc.gov](mailto:klk@nrc.gov).

Sincerely,

**/RA/**

Kenneth L. Kalman, Project Manager  
Materials Decommissioning Section  
Division of Waste Management  
and Environmental Protection  
Office of Nuclear Material Safety  
and Safeguards

Enclosures:

1. Meeting Summary
2. Assessment of Rate of Return for  
Decommissioning Financial Assurance

Docket No.: 04007102

License No.: SMB

cc:

Eric Jackson, President  
Jill Lipoti, Ph.D., NJ DEP  
Donna Gaffigan, NJ DEP  
Trevor Anderson, US EPA  
L. Williams, Newfield Resident  
T. Ragone, Newfield Resident  
R. Westergaard, Newfield Mayor

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**SUMMARY OF THE MARCH 9, 2006 MEETING  
BETWEEN U.S. NUCLEAR REGULATORY COMMISSION STAFF  
AND SHIELDALLOY METALLURGICAL CORPORATION  
TO DISCUSS REVISION 1 OF THE DECOMMISSIONING PLAN  
FOR THE SHIELDALLOY SITE IN NEWFIELD, NEW JERSEY**

On March 9, 2006, the United States Nuclear Regulatory Commission (NRC) staff met with representatives of Shieldalloy Metallurgical Corporation (SMC) to discuss the NRC comments that lead to rejection of Revision 1 of the Decommissioning Plan (DP) for the SMC site in Newfield, New Jersey. The NRC staff's rejection was transmitted by letter dated January 26, 2006 (ML 060180551). Staff from the New Jersey Department of Environmental Protection (NJDEP) also participated in the meeting by telephone (See Attachment 1).

The NRC staff provided an overview of the NRC's review process for decommissioning plans (DPs), and explained why SMC's DP submittal was rejected by NRC staff. The major deficiencies were in the information SMC provided regarding: (1) Dose Modeling, (2) Surface Water Hydrology and Erosion Protection, (3) Restricted Use/Institutional Controls, and (4) Financial Assurance. The NRC staff noted that SMC's DP would be accepted for a detailed technical review once SMC has sufficiently addressed these areas.

Discussion focused on four major areas and specific action items were identified.

**1) Dose Modeling**

The NRC staff discussed the importance of identifying and justifying key parameters. SMC staff stated that it had provided this information in the DP. However, NRC staff responded that SMC, in its DP, did not identify the key parameters associated with each of the scenarios considered in its dose analysis. For example, the DP explained that the key parameters for the recreational hunter scenario (restricted area, controls in place) were identified in Chapter 17. However, only a list of common parameters for the restricted area was provided in Chapter 17. Further, it is the staff's position that either very limited, none, or inappropriate justification was provided for key parameters used in the dose assessment.

The staff noted that it is inappropriate to simply cite a reference as a basis for a parameter value, if it is not clear how the selected parameter value was derived based on information in the reference or if there are credible values within the cited reference that would lead to a higher dose estimate.

Action Item: SMC needs to clearly identify key parameters for each scenario evaluated as part of its dose analysis. Further, SMC needs to provide adequate and appropriate justification for the value of these key parameters.

The NRC staff noted that SMC's dose assessment did not consider all appropriate exposure pathways. For example, the staff noted that SMC did not provide an appropriate basis for excluding the groundwater pathway. In particular, the fact that there is a current water supply at the facility and that the assumed land-use scenario is industrial, are inadequate bases for excluding this exposure pathway for a long-term analysis. The NRC staff also noted that it

previously advised SMC to either provide a stronger basis for excluding this exposure pathway or simply include it in the assessment.

The NRC staff noted that SMC had not considered all of the scenarios that were previously discussed during pre-submittal calls. For example, the staff noted that SMC was previously advised to consider a scenario involving a recreational hunter exposed to an uncovered part of the pile; however, this scenario was not included in the DP. SMC indicated that this scenario is bounded by other scenarios already considered. The NRC staff agreed that it may be bounded by other scenarios; however, given the uncertainty with the parameter values, NRC staff is unable to agree with SMC's approach, at this point.

Action Item: SMC will include the groundwater pathway in its analyses or further justify its rationale for excluding it.

Action Item: SMC will analyze doses for a scenario involving a recreational hunter exposed to a partially uncovered pile.

## **2) Surface Water Hydrology and Erosion Protection**

The NRC staff noted that many of the technical analyses were incorrect and incomplete relative to surface water hydrology and design of erosion protection. For example, the Probable Maximum Precipitation and resulting Probable Maximum Flood runoff rates were incorrectly determined. The determinations of actual runoff velocities, relative to the permissible velocities, were not appropriate, based on inappropriate use of Manning's 'n' value, rainfall intensity, slope lengths, and flow concentration factors. Insufficient information was provided to address the flow velocities on the top slopes. The NRC staff stated that, based on the site-specific parameters, it is likely that rock will need to be placed on the side slopes and on the toe of the side slopes. The NRC staff discussed its concerns with: (1) rainfall intensity being greater than SMC assumed, (2) SMC's use of Manning's value to be an order of magnitude too high, and (3) SMC's reliance on soil cover alone, to be insufficient.

Action Item: SMC agreed to reevaluate the parameters and will assess whether more conservative or more readily available parameters are appropriate.

Action Item: SMC may request a technical meeting with NRC to discuss this issue in more detail.

## **3) Restricted Use/Institutional Controls**

The NRC staff noted that one of the major information deficiencies in the DP's discussion of SMC's eligibility for the long-term control (LTC) license option was a demonstration that SMC was unable to arrange other types of institutional controls and independent third party arrangements, such as a letter from the State rejecting responsibility for ownership, control, or independent third party oversight.

Action Item: SMC will discuss this issue with the NJDEP and ask for a written position regarding the State's role in institutional controls and independent third party

arrangements specific to the SMC site. SMC may opt to involve NRC in a three-way call with NJDEP to explore the issue of obtaining a written position from the State.

The NRC staff noted that although SMC provided information on the use of institutional controls that it received from the Site Specific Advisory Board (SSAB), NRC recognized that there was a general SSAB concern that not enough information was provided to the SSAB. The NRC staff suggested that SMC continue its interactions with the SSAB, to ensure common understanding, as well as to identify how the whole site could be reused under the LTC license option, real or perceived barriers to reuse, and, ways to resolve these barriers

The NRC staff stated that SMC proposed to release the unrestricted use portion of the site rather than maintain it with the restricted use portion under the LTC license option. NRC staff noted that this approach is inconsistent with NRC's interim guidance developed for this site (ML041320436), but did not reject the DP because of the SMC approach. The NRC staff agreed that there may be benefit in further exploring this issue in view of the feedback that SMC received from the local community.

Action Item: NRC will further consider the issue of partitioning the site.

The NRC staff noted that SMC should discuss how site ownership of the restricted use portion of the site would be sustained over the long-term, if it were separate from the rest of the site, to avoid gaps in ownership, and control, and to minimize NRC's active involvement to take actions if there is a gap. SMC pointed out that sustaining the license and sustaining ownership of the property are two separate things, and that requiring the owner/licensee to keep both the restricted and the unrestricted portions of the site together, would neither enhance nor detract from license sustainability. Furthermore, potential future property owners would likely not see the requirement for a NRC license to be a beneficial feature of the property. The NRC staff stated that SMC should further explore both approaches with the SSAB and provide this additional information for NRC review. SMC noted that the issue of sustaining the license could be separated from the issue of sustaining ownership of the site.

Action Item: SMC will further explore the issues of sustaining ownership and sustaining the license and present its findings to NRC staff.

The NRC staff discussed the value of SMC adding justification based on risk insights from the dose assessment for restrictions listed in its DP. SMC pointed out that the risk justification was already presented in the DP (Chapters 5, 7 and 16). The NRC stated that this is probably true but wanted the information to be pulled together into the relevant sections of Chapter 16 to more clearly describe the link between risk insights and restrictions on site use.

Action Item: SMC will consider adding justification.

#### **4) Financial Assurance**

The NRC staff reiterated the concerns stated in its January 26, 2006, (ML060180551) letter that SMC did not provide sufficient rationale for its alternative approach to meet the regulatory requirements for financial assurance.

SMC stated that funds were earmarked for decommissioning as part of a bankruptcy settlement. The U.S. Environmental Protection Agency (EPA), the State of New Jersey, and the NRC each holds part of the funds. NRC stated that SMC must provide financial assurance to meet NRC regulations, which means that SMC must deliver an adequate financial instrument into the NRC's possession in an amount sufficient to cover the costs of decommissioning.

Action item: SMC will forward a copy of the current financial instruments to the NRC for review.

Action item: SMC will identify the contacts at each of relevant agencies and provide that information to NRC. SMC will then coordinate with the other two agencies to determine the appropriate distribution of the financial assurance as agreed in the bankruptcy settlement agreement of April 1997, pursuant to 10 CFR Part 40.36 which requires the licensee to submit original signed financial instruments.

The NRC staff noted its concern that SMC assumed a greater return on investment (ROI) than appears appropriate for the long-term surveillance and monitoring fund. The NRC's interim guidance applied a one percent ROI for the LTC license option. However SMC used a three percent ROI, which was based on regulatory guidance. The higher ROI assumed by SMC reduces the amount placed in trust to cover long-term surveillance and monitoring costs, which increases the potential for inadequate funding in the event a string of losses occurs in the funds investments.

SMC stated that it assumed a three percent return on investment based on NUREG/BR-0058, "Regulatory Analysis Guidelines of the U.S. Nuclear Regulatory Commission," which suggests that a discount rate of three percent may be applicable to decommissioning rulemaking issues. The NRC stated that it had previously informed SMC that one percent return on investment is the appropriate rate, based on similarity to mill tailings sites, for which the one percent figure is a requirement. After the meeting, NRC staff confirmed that NUREG/BR-0058 stated that ethical and technical considerations would support discount rates lower than three percent per year. SMC asked what would happen if the funds built up over time. NRC replied that if the trust fund amount significantly exceeded the amount necessary to cover the long term maintenance and control costs, then excess funds would be returned to SMC.

The NRC noted that the DP did not specify that the amount placed in the trust fund would include a 25% contingency factor for long term costs. Shieldalloy stated that it had included a 25% contingency based on the total of all costs, including the trust fund. NRC agreed that the cost estimate included a line item that provided a 25% contingency for the total costs, however, a question remained concerning the trust fund amount. It appeared that Shieldalloy's DP proposed placing into the trust only sufficient funds to cover the calculated long term costs. If that is the case, then the funds held in trust will not include the 25% contingency. NRC stated that the funds placed in trust must cover the long-term costs plus a 25% contingency. SMC noted that the DP stated that its intent was to add funds sufficient to include the contingency factor amount.

Action item: NRC staff will review the financial assurance information in SMC's DP to see how the 25% contingency was included in the long-term surveillance and monitoring fund.

Action item: SMC agreed to check the wording to ensure it is clear that the 25% contingency applied to both the construction and the long-term surveillance and monitoring fund.

### **Path Forward**

After discussing the four major areas, NRC staff discussed its concerns about the remaining areas of the DP. The NRC staff stated that SMC provided sufficient information about the remaining areas for the staff to begin its technical review, but there will be requests for additional information for it to complete its technical review.

Action Item: SMC agreed to consider the concerns identified in the January 26, 2006 letter and the March 9, 2006 meeting and determine how it wants to respond, such as in a revision to its DP, or an addendum.

Action Item: SMC will provide a schedule to NRC within two weeks of the March 9, 2006 meeting for addressing the concerns.

Before concluding the meeting, observers were given the opportunity to ask questions or comment. In particular, NJDEP staff noted that NJDEP had not yet received a request from SMC for a formal position from the State regarding a potential role with institutional controls or the independent third party. NJDEP staff also noted that NJDEP will not submit its comments on the DP until NRC accepts the DP for its technical review.

Action Item: NJDEP asked about the NRC/EPA Memorandum of Understanding and when it will be implemented for SMC. NRC staff agreed to get back to NJDEP on this.

Attachment: SMC Meeting Attendees

## MEETING ATTENDEES

Date: March 9, 2006

Topic: Shieldalloy Revised Decommissioning Plan

NAME	AFFILIATION	PHONE NUMBER
Ken Kalman	US NRC	301-415-6664
Jean Oliva	TRC Envir. Corp	860-298-6232
David Smith	SMC	856-692-4201
Joe Diegel	SMC	856-241-4650
Carol Bergen	IEM (SMC)	240-631-8990
R. Budd Haemer	Pillsbury Winthrop Shaw Pittman	202-663-9086
Robert Smith	TRC Environmental	860-298-6229
Michael P. Turner	NWW (SMC)	201-507-9500
Matthew Brown	TRC Evironmental	860-298-6359
Shamica Walker	US NRC	301-415-5142
Bill Thomas	SMC	419-23-4701
Amy Snyder	US NRC	301-415-8580
Claudia Craig	US NRC	301-415-7276
Robert L. Johnson	US NRC	301-415-7282
Jon Peckenpaugh	US NRC	301-415-6753
Mark Thaggard	US NRC	301-415-7971
Thomas Frederichs	US NRC	301-415-5971
Ted Johnson	US NRC	304-876-2209
James Webb	US NRC	301-415-6252
Neil Jensen	US NRC OGC	301-415-1637
Marisa Higgins	US NRC OGC	301-415-4060
Duane Schmidt	US NRC	301-415-6919
Marie Miller	US NRC RI DNMS	610-337-5205

Attachment

<b>NAME</b>	<b>AFFILIATION</b>	<b>PHONE NUMBER</b>
Gregor Suber	US NRC	301 415-1124
<b>TELEPHONE PARTICIPANTS</b>		
Patricia Gardner	NJ DEP	609-984-5400
Jenny Goodman	NJ DEP	609-984-5498
Nancy Stanley	NJ DEP	609-984-5452
Donna Gaffigan	NJ DEP	609-633-1494

## **ASSESSMENT OF RATE OF RETURN FOR DECOMMISSIONING FINANCIAL ASSURANCE**

Pursuant to the March 9, 2006, meeting with the Shieldalloy Metallurgical Corporation (SMC), U.S. Nuclear Regulatory Commission (NRC) staff has revisited the issue of an appropriate rate of return for decommissioning Financial Assurance. The NRC staff notes first that the scope of NUREG/BR-0058 does not include consideration of individual license conditions. As stated in its Forward, NUREG/BR-0058 applies only to the following three types of regulatory actions: (1) analyses for rules, orders, bulletins, generic letters, regulatory guides, standard review plans, and standard technical specifications; (2) back fitting licensed facilities [subject to the back fit rule found in Title 10, Section 50.109, of the *Code of Federal Regulations* (10 CFR Part 50.109)]; and (3) imposition of generic requirements (subject to review by the Committee to Review Generic Requirements). Individual licensing actions do not fall within that scope. Consequently, the rate of return guidance in the document is not applicable to the trust fund under consideration.

However, even if NUREG/BR-0058 was applicable, the rate of return guidance would not apply in this case. SMC's presentation at the meeting quoted NUREG/BR-0058: "OMB continues to see value in applying discount rates of three to seven percent" for decommissioning issues. However, that statement is not a rigid limit on the NRC's evaluation of decommissioning issues, as made clear by the following sentence, which states: "However, ethical and technical arguments can also support the use of lower discount rates" (NUREG/BR-0058, p. 32). In this case, both ethical and technical arguments support using a lower rate.

The use of an onsite containment cell will require long-term maintenance and control. Considerations of intergenerational justice support providing adequate funds now to avoid imposing costs on future generations who will not receive the benefits derived from the use of the radioactive materials.

From the technical view, the NRC staff rejected application of the guidance to calculate contributions to a decommissioning fund in the final rule for Financial Assurance Requirements for Decommissioning Nuclear Power Reactors, issued September 22, 1998 (63 FR50465, 50476-50477). The basis of the rejection was that: (1) the discount rates called for in NUREG/BR-0058 apply to certain financial decision-making analyses, but are irrelevant for calculating contributions to decommissioning funds, and (2) applying such rates could result in inadequate funding due to the fact that the rate of return on government securities is lower than 3 percent for significant periods of time. The same arguments apply to the Shieldalloy site. Therefore, NUREG/BR-0058 is irrelevant to calculating the contribution to the trust fund. As for selecting the appropriate rate, the NRC staff has already considered that question in the context of uranium and thorium contamination left onsite, and found that a one percent rate is appropriate, as specified in Criterion 10 of Appendix A to 10 CFR Part 40. The Shieldalloy site contains uranium and thorium contamination that will be left onsite, and thus the one percent rate is appropriate in this case. As a result, the staff included the one percent rate in the interim guidance for the Long-Term Control license option at the Shieldalloy site and in the draft decommissioning guidance in NUREG-1757, Supplement 1 for demonstrating compliance with the sufficient financial assurance requirement of 10 CFR Part 20.1403(c).

Consequently, to be acceptable, SMC's revised Decommissioning Plan must calculate the contribution to the decommissioning trust fund using a one percent rate of return. In addition, the fund must include a 25% contingency factor.