

January 26, 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: REJECTION OF THE REVISION 1 TO THE DECOMMISSIONING PLAN FOR  
THE NEWFIELD FACILITY (TAC NO. L52094)

Dear Mr. Smith:

By letter dated October 24, 2005 (ML053190212), Shieldalloy Metallurgical Corporation (SMC) submitted Rev. 1 of the Decommissioning Plan (DP) for the Newfield Facility, with supporting documents. On October 31, 2005, the U.S. Nuclear Regulatory Commission (NRC) staff began its 90-day expanded acceptance review of the DP in accordance with NUREG-1757 (Consolidated NMSS Decommissioning Guidance), Vol. 1, Section 5.3. The purpose of an expanded acceptance review is to determine if there is enough information in the DP, and, if the level of detail appears to be adequate, for the NRC staff to perform a detailed technical review.

In addition, the expanded acceptance review included a limited technical review. This technical review focused on those areas which experience has shown to have the potential for significant technical deficiencies (dose modeling, surface water hydrology and erosion protection, institutional controls, and financial assurance). The NRC staff used the guidance in NUREG-1757 and the May 15, 2004, interim guidance for a long-term control (LTC) license at the SMC site for conducting the review to identify technical deficiencies that could significantly impact the progress of the detailed technical review. Deficiencies identified by our review are enclosed.

NRC is not accepting SMC's DP for the Newfield Facility at this time due to these deficiencies. Acceptance at this time would likely require multiple rounds of requests for additional information (RAIs) from the NRC staff to resolve the deficiencies. To date, the NRC staff has provided the May 15, 2004, interim guidance to SMC regarding the use of a LTC license for long-term control as well as guidance on dose assessment, engineered barriers, and financial assurance. We have held open-to-the-public meetings and teleconferences with SMC to discuss various issues regarding the DP. We also used a phased approach whereby NRC staff reviewed and provided comments to SMC on draft chapters of the DP. We are particularly concerned that, regardless of these additional measures that have been taken to enable SMC to submit an acceptable DP, we have identified several areas where multiple rounds of RAI's will be necessary to provide us with the information needed to complete a technical review of the DP. Furthermore, there appears to have been a general disregard for the interim guidance provided by NRC so that SMC could address restricted use/institutional control issues and resubmit a high quality DP.

D. Smith

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Based on the above, we believe that SMC management should meet with NRC management to discuss the path forward for the Newfield Facility, including the schedule for initiation of decommissioning at the site. Please contact Ken Kalman, of my staff, at (301) 415-6664 to arrange this meeting.

Please direct any questions concerning your request to me at (301) 415-7295.

Sincerely,

**/RA/**

Daniel Gillen, Deputy Director  
Decommissioning Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Nuclear Material Safety  
and Safeguards

Enclosure:  
NRC Comments

Docket No.: 04007102  
License No: SMB-743

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

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DATE	1/18/06	1/20/06	1/20/06	1/25/06	1/26/06

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SIGNIFICANT DEFICIENCIES NOTED  
IN THE NRC STAFF'S LIMITED TECHNICAL REVIEW  
OF SHIELDALLOY METALLURGICAL CORPORATION'S  
DECOMMISSIONING PLAN FOR THE NEWFIELD FACILITY

Dose Modeling

During numerous meetings with SMC, the NRC staff stressed the importance of identifying and justifying the chosen value for parameters determined to be important to the estimated dose. For most of the scenarios evaluated for the restricted area, assuming that institutional controls fail, key parameters are not identified. For example, in Chapter 17, SMC discussed how parameter values were derived, but no justification was provided. In fact, some significantly important parameters (e.g., shielding factor) are not even included in the list.

It should be noted that the greatest expected risk associated with the site is expected to be associated with the radioactivity in the controlled area once controls have failed. However, more discussion is provided for chosen parameter values for situations at the site where the radiological risk is expected to be much less (e.g., scenarios associated with unrestricted release). In some of these situations, the justification for chosen parameter values is minimal. For example, for the industrial scenario, SMC noted that the fraction of time spent outdoors and the shielding factor are two of the most sensitive parameters. However, the reference cited as a basis for the chosen value for the fraction of time spent outdoors would suggest that the selected value is likely to result in a lower than actual dose. The value selected for the shielding factor is not even listed. In other cases, a reference is cited. However, it is not clear how the chosen value was derived from the reference (e.g., the fraction of the time that a trespasser is assumed to spend at the site in the unrestricted release area) or the basis for selecting the value (e.g., why it is considered to be either acceptable or conservative).

In considering multiple land-use scenarios, SMC needs to provide more information used in defining the scenarios and developing appropriate exposure pathways. For example, the justification for excluding the groundwater as an exposure pathway is lacking in that it amounts to assuming that the current water supply will always be available. During our June 14, 2005, telephone conference, NRC staff advised SMC to evaluate the potential impacts associated with including the groundwater pathway before attempting to justify its exclusion. This comment was also reiterated in our June 24, 2005, letter to SMC (ML051680544). It is not clear if this was done in the DP.

SMC was also advised to consider a scenario of a recreational user being exposed to a previously excavated portion of the pile when the land-use restriction fails. However, there is no discussion of this scenario in the DP.

### Surface water hydrology and erosion protection

SMC failed to produce sufficient information showing that it met the regulatory requirements regarding the use of engineered barriers. (For one acceptable approach, see Guidance in NUREG-1623). 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 as well as the likely need for rock to be placed on the side slopes and on the toe of the side slopes.

### Restricted Use/Institutional Controls

Chapter 16 on restricted use includes very limited information about the proposed use of the long-term control (LTC) possession-only license and a supporting deed notice. Although the proposed LTC license could resolve one of the most significant issues that caused rejection of the first DP, SMC did not provide important information about the LTC approach and restricting future site use that was described in NRC's interim guidance developed for this site and discussed with SMC. Major areas with either missing or insufficient information include:

Eligibility for the LTC license option, including 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 (interim guidance, p. 4);

Although restrictions were simply listed, there was no justification given based on risk insights from dose assessments, such as specific access and land use scenarios that could lead to non-compliance with the dose criteria (interim guidance, p. 9);

Detriments to using the LTC license including stakeholder input (interim guidance, p. 11); and

Demonstration that the engineered cap has been designed to be sufficiently robust to remain effective even assuming loss of monitoring and maintenance (interim guidance, p. 11) (see also comment above on erosion control).

NRC recognizes that SMC proposes to release the unrestricted use portion of the site rather than maintain it with the restricted use portion under the LTC license. This approach is inconsistent with NRC's interim guidance developed for this site, and there may be benefit in further exploring this issue. NRC notes that SMC justified its position in response to the Site-Specific Advisory Board (SSAB) comments on this question, stating its position is based on sufficient financial assurance to pay for long-term monitoring and maintenance of the restricted area. NRC's interim guidance developed

for this site and draft guidance in NUREG-1757 Supplement 1 were written to provide both protection and beneficial reuse of the total site. Both guidance documents explain that the LTC license would specify safe, and therefore, permitted uses of all parts of the site so there would be no uncertainty regarding safe use of the site by parties interested in leasing or purchasing the site in the future. Thus, there might be no restrictions on future use for the majority of the site area outside of the restricted area with the disposal cell. To help resolve this issue, SMC should describe the potential for reuse of the site as a whole under the LTC license. SMC should work with the SSAB to clearly discuss the pros and cons of this approach given in the NRC's draft guidance on page II-57, to ensure common understanding, as well as to identify how the whole site could be reused under the LTC license, real or perceived barriers to reuse, and, ways to resolve these barriers. SMC should also 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 should further explore both approaches with the SSAB and provide this additional information for NRC review.

Although SMC provided information on use of institutional controls that it received from the SSAB, NRC recognizes that there was a general concern that not enough information was provided to the SSAB. SMC should take this opportunity to enhance its interactions with the SSAB, as it noted in responses to the SSAB input.

### Financial Assurance

The staff is concerned that SMC did not provide sufficient rationale for its alternative approach to meet the regulatory requirements for financial assurance. Specifically, SMC assumes a greater return on investment (ROI) than appears appropriate for the long-term surveillance and monitoring fund. The NRC's interim guidance (which represents one approach for meeting the regulations) applies a 1% ROI for the LTC license. However SMC used a 3% ROI. 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. Also, SMC did not specify whether it would include a 25% contingency in the long-term surveillance and monitoring fund.

The tables of decommissioning costs do not present sufficient detail to permit the NRC to assess the adequacy of the cost. The unit costs combine labor, material, equipment, and overhead and profit costs. NUREG-1757, Vol. 3 and the interim guidance developed for this site asks the licensee to present the cost elements separately.

The NRC staff also notes that the DP did not include a Certification Statement or an originally signed financial instrument to cover the decommissioning costs. The Certification is required as an affirmation that financial assurance has been provided, even though the licensee plans to pay for decommissioning out of operating funds. The Certification and originally signed financial instrument will be required before final approval of the DP.