

February 12, 2007

Jennifer Davis, Branch Chief  
Environmental and Performance Assessment Directorate  
Division of Waste Management and Environmental Protection  
Office of Federal and State Materials and Environmental Management Programs  
Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

RE: **Shieldalloy Metallurgical Corporation**  
**Newfield, Gloucester County**  
**Notice of Intent to Prepare EIS for Decommissioning**

**Docket No. 04-7102**

**Scoping Comments**

Dear Ms. Davis:

The Office of Permit Coordination and Environmental Review of the New Jersey Department of Environmental Protection (NJDEP) has completed its review of the Scoping Document entitled *Publication in the Federal Register of Notice of Intent to Prepare An Environmental Impact Statement (EIS) for Decommissioning of Shieldalloy Metallurgical Corporation Newfield, Gloucester County*. We offer the following comments for your consideration.

The United States Nuclear Regulatory Commission (NRC) will be preparing an Environmental Impact Statement (EIS) because Shieldalloy Metallurgical Corporation (SMC) has proposed to decommission the site to a restricted use scenario by consolidating the regulated and contaminated materials under an engineered barrier for 1000 years.

The NJDEP has relied upon our review of the Decommissioning Plan, Revision 1a (DP) submitted to NRC by SMC on June 30, 2006 to identify issues

E/27

that should be addressed in the EIS. The NJDEP request that the following information be included in the EIS.

### Land Use

In the discussion on page 41 of the DP about the reasonably likely foreseeable future use (100 years) scenarios for the site it is stated that there are existing site use restrictions due to natural resource restoration and potential future residential use restrictions due to chemically contaminated soil. It also mentions the proximity of the Pinelands National Reserve. It states that these restrictions will result in a land buffer to prevent construction in close proximity to the engineered barrier. SMC uses these assumptions in the dose assessment to limit the evaluation to non-residential exposure scenarios.

This is unacceptable since these three land use restrictions are only institutional controls that are considered to disappear under an "all controls fail" scenario. See 10 C.F.R. § 20.1403(e). Also, residual chemical contamination that utilizes properly managed engineering and institutional control as part of a remedial action does not preclude any future use of the site, including residential. Therefore, the foreseeable future use scenario must evaluate residential use.

### Water Resources

The ground water contamination, mainly chromium and trichloroethene, extends at least one half mile downgradient of the site despite the operation of a pump and treat unit specifically constructed to address this issue. The extensive ground water resulted from a mere 50 years of operations, so there is a great possibility that additional ground water contamination from the restricted area could result from 1000 years of storage of materials on the soil surface. Therefore, it is imperative that the EIS address the ground water as an exposure pathway. However, in Chapter 5 (Dose Modeling) of the DP, SMC excludes the evaluation of groundwater as an exposure pathway because:

- the Engineered Barrier is designed to prevent rainwater infiltration,
- TCLP results of residual radioactivity show slag is resistant to leaching,
- ground water is already contaminated with chromium and TCE, and is therefore not a potable supply; and
- unreasonable to assume future operations would maintain an on-site drinking water well when a municipal supply is near.

The NJDEP disagrees with the above assumptions.

The DP is contradictory in its discussion of the engineered barrier. In some sections the DP states that a geomembrane will be present to prevent water infiltration through the buried materials and in others the absence of such a membrane is noted. Also, at the public meeting held in Newfield on December 5,

2006, the NRC staff stated that the engineered barrier would be designed to *allow rainwater infiltration*. A permeable engineered barrier allows for the potential leaching of contaminants from the buried materials directly into the ground water. This is especially true since no liner is proposed beneath the contaminated material, and the material sits on the native sandy and very permeable soil.

The slags and baghouse dust were subjected to the Toxicity Characteristic Leachability Procedure (TCLP). The resulting "leachate" was then analyzed for radionuclides only, with the results presented in Appendix 19.4 of the DP. There are many problems with this analysis.

SMC proposes to consolidate radioactively contaminated soils and building materials with the slag and baghouse dusts that will be buried under the engineered barrier. The contaminated soils and building materials were not, but definitely must be, analyzed for leachability of radionuclides using an appropriate method before they are considered for inclusion under the engineered barrier.

Representative samples of each of the materials that will be placed under the engineered barrier must be analyzed for TCLP to determine if they are hazardous waste and possibly banned from land disposal. Even if the results are below the limits for hazardous waste classification, the TCLP results will indicate if any of the materials, particularly the soils and building materials, are contaminated with metals or other contaminants that may be leachable and present a continuing source of ground water contamination. While the baghouse dust was analyzed for leachability of radionuclides, the distribution coefficients were not determined.

Only three samples of slag (for more than 30,000 cubic meters of a variety of slags) and two samples of baghouse dust (for more than 13,000 cubic meters of dust) were subjected to TCLP and subsequent radionuclide analysis. It is unlikely that these three samples are sufficient to accurately represent the large volume of materials present. A representative number of samples of any and all materials that will be placed under the engineered barrier must be collected and analyzed to determine leachability of both radionuclides and chemical contaminants.

The results indicate that radium may leach from the slag, contradicting SMC's statement that the slag is resistant to leaching.

SMC fails to state that the chromium and TCE contamination in the ground water is a direct result of their operations. Further, SMC's consultant, TRC Environmental Company, has entered into an oversight document with the NJDEP to remediate the chemical contamination in the ground water, soil, sediment and soil. TRC's goal is to remediate the ground water as quickly as possible, potentially within 20 years. It is therefore unacceptable for SMC to

W/IN  
SCOPE ?

state that just because the ground water is already contaminated that it should not be considered to be potable source for the next 1000 years.

3 | SMC fails to mention in this section that the current municipal supply wells are located less than one mile from the site and draw water from the same aquifer that they have contaminated. The wells are located upgradient of the site, however, the presence of large volume irrigation wells in the immediate area, in conjunction with the constant pumping of the municipal wells, makes transport of the contamination towards and into the potable wells a possibility over the next 1000 years. In addition, SMC is located in the New Jersey Coastal Plain Sole Source Aquifer and as such there are obvious limits to alternative water supplies. (see <http://www.epa.gov/region02/water/aquifer/coast/coastpln.htm#119>). Protection of this resource is critical and must be evaluated.

4 | Residual radioactivity has been identified in the Hudson's Branch as indicated in the Executive Summary and Appendix 19.9, Environmental Report. The data referenced is from a 1992 report which concluded that the radioactivity detected in the Hudson's Branch water and sediments is not significantly different from background. However, the water sample at H49 on Map 6 in Appendix B of the Environmental Report is above the surface water standard for total uranium<sup>1</sup>, 52 ug/L compared to the NJ Surface water standard of 30 ug/L. Several samples of water on Map 8 are above the surface water standard for radium. Several sediment samples are above the NJDEP soil cleanup standards for radium. Clearly, the Hudson Branch is contaminated above background concentrations. It does not appear that sampling of the stream has been conducted since 1991. The sediment and surface water contamination has not been adequately addressed in the DP. The EIS must address sediment and surface water.

### Cumulative Effects

5? | SMC is dismissive about its Superfund status. Fifty years of site operations have resulted in soil, sediment, surface water and ground water contamination with radiological and non-radiological (chemical) contaminants. The cumulative effects from past, present and foreseeable future actions at and near the site must be addressed in the EIS.

### Alternatives

6 | Section 3.0, Alternatives to be Evaluated, of the Notice of Intent states that only two alternatives will be assessed in the EIS, the No Action and the Proposed action (the LTC) alternatives. The EIS should also evaluate the Decommissioning to Unrestricted Use/License Termination (off-site disposal of radioactive materials) alternative.

<sup>1</sup> U-238 concentration is divided by 0.3365 pCi/ug to determine total uranium mass concentration.

## Impact Areas

Section 4 of the Notice of Intent identifies areas that will be analyzed in EIS. The Notice of Intent should have provided additional detail regarding the methodologies and models that will be used to analyze these areas of concern. The EIS must provide a detailed analysis of impacts to all the areas of concern identified in Section 4 of the Notice of Intent.

Thank you for the opportunity to be part of the scoping process for this project.

Sincerely,

Kenneth C. Koschek  
Supervising Environmental Specialist  
Office of Permit Coordination  
and Environmental Review

C: Donna Gaffigan, NJDEP  
Pat Gardner, NJDEP