

November 24, 2003

David R. Smith
Environmental Manager
Shieldalloy Metallurgical Corporation
Aluminum Products & Powders Division
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Newfield, NJ 08344-0768

SUBJECT: NUCLEAR REGULATORY COMMISSION STAFF COMMENTS ON
OCTOBER 6, 2003, SUBMITTALS REGARDING ITEMS 9 AND 11 OF THE
ACTION PLAN FOR THE SHIELDALLOY METALLURGICAL CORPORATION
SITE IN NEWFIELD, NEW JERSEY

Dear Mr. Smith:

This letter responds to your letter, dated October 6, 2003, which addressed Item Number 9 of your action plan. Your letter provided a brief description of the exposure scenario you are evaluating as part of the decommissioning planning process (Attachment 1), the exposure pathways associated with that scenario (Attachment 2), a listing of the input parameters that we intend to use for dose modeling (Attachment 3), and the distribution parameters for the uncertainty induced in the modeling output as a result of the inherent error in each of the input parameters (Attachments 4 and 5).

Another letter, also dated October 6, 2003, addressed Item No. 11 of your Action Plan. That letter included an attachment that will eventually be incorporated in Rev. 1 of the decommissioning plan in order to satisfy the Environmental Report requirement for a Group 6 Decommissioning as described in NUREG-1757 (Vol. 1), "Consolidated NMSS Decommissioning Guidance - Decommissioning Process for Materials Licenses - Final Report".

Both of your submittals were provided to the U.S. Nuclear Regulatory Commission (NRC) as part of the ongoing pre-decommissioning plan (DP) consultation and phased-review for the NRC staff to give Shieldalloy Metallurgical Corporation early feedback on key topics to be included in the revised DP. Attachments 1 (Exposure Scenarios), 4 and 5 (Input Parameters) would not be accepted for staff technical review if provided in the DP. Therefore, we are providing comments as guidance in preparing an acceptable DP for the topics addressed.

Mr. D. Smith

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These comments are based on our review of your submittals as well as discussion of these submittals during our October 22, 2003, telecon with you. Please note, for future reference, that NUREG documents are issued as guidance, not as requirements. As a result, you will notice, that in our comments on Action Plan Item 11, that we changed your wording "NUREG-1748 Requirements" to "NUREG-1748 Guidance."

If you have any questions regarding this letter, please call me at 301-415-6664 or email me at klk@nrc.gov.

Sincerely,

/RA/

Kenneth L. Kalman
Decommissioning Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Attachments:

1. NRC staff comments regarding Action Plan Item 9 submittal
2. NRC staff comments regarding Action Plan Item 11 submittal

Docket No. 04007102
Control No. 132074
License No. SMB-743

cc: Eric Jackson, President
Jill Lipoti, Ph.D., NJ DEP
Donna Gaffigan, NJ DEP

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cc: Jill Lipoti, Ph.D., NJ DEP
Donna Gaffigan, NJ DEP

DISTRIBUTION:	MMiller RIII RJohnson CBurkhalter	DCB r/f MThaggard	KKalman MWong
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*See previous concurrence

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OFC	DCB/DWM	DCB/DWM	DNMS/RI	OGC	DB/DWM
NAME	*K.Kalman	CBurkhalter*	RBellamy *Concurrence via e-mail	*JLieberman no legal objection	GSmith:gng*
DATE	11/20/03	11/21/03	11/14/03	11/19/03	11/24/03

NRC STAFF COMMENTS REGARDING ACTION PLAN ITEM 9

Attachment 1. Exposure Scenarios

1. Shieldalloy's October 6, 2003, submittal did not clearly identify its preferred decommissioning approach that the dose assessments would need to support. In the previously submitted decommissioning plan (DP), Shieldalloy proposed to release a portion of the site for unrestricted use and another smaller portion for restricted use. If this continues to be Shieldalloy's preferred approach, a dose assessment is required for the unrestricted use portion that complies with 10 CFR 20.1402 and takes into account the dose from the restricted use portion of the site. Similarly, a second dose assessment is required for the restricted use portion that complies with 10 CFR 20.1403 and also takes into account the dose from the unrestricted use portion of the site. Shieldalloy should clarify its preferred decommissioning approach and provide the appropriate dose assessments. Guidance for partial site release may be relevant for these assessments. The following comments are based on the assumption that Shieldalloy might prefer an approach similar to the one in its previous DP, but the NRC staff is aware that Shieldalloy is considering alternatives.

2. Reasonably foreseeable scenarios should be selected for compliance with the dose criteria for both, the restricted use and the unrestricted use portions of the site.

Restricted use portion of the site

2a. The description of scenarios for restricted use needs to be analyzed for two cases: 1) with restrictions on land use under the NRC possession-only license (POL) for long-term control and 2) without restrictions in place (i.e., assuming institutional controls/POL fail).

2b. Define the land use of the restricted use portion under the POL and what the critical group could be, such as a maintenance worker to inspect or repair the disposal cell periodically (e.g., visual inspection and routine maintenance as needed for 8 hours/mo and cap repair for 2 weeks every 5 years) or full time industrial workers (e.g., all year and for 8 hrs/day) in the unrestricted part of the site receiving an exposure from the cell in the adjacent restricted area. These scenarios would also assume no erosion if monitoring and maintenance/repair conditions under the POL would mitigate any erosion impact on the cell. These are only example uses under the POL. Shieldalloy will need to describe the specific uses that will be evaluated.

2c. The description of the restricted use scenario without restrictions in place could use the more realistic scenario option in the staff's LTR Analysis in SECY-03-0069 to identify the reasonably foreseeable land use in the next few decades assuming no controls or restrictions. The selection of these land uses should reference land use plans and input from local official as SMC has already noted in Attachment 1. These general land uses essentially could be the same as the scenarios for the unrestricted release portion of the site. However, under the assumption of failure of the institutional control/POL, the cell cap monitoring and maintenance would not occur and could not be assumed to prevent erosion of the cell cover. Therefore, eventual erosion and failure of the

cover or parts of the cover and exposure of the slag or other contamination would need to be incorporated into the analysis. Furthermore, human intrusion into the cell by excavation or removal of material would need to be evaluated to determine if it is reasonably foreseeable. For example, excavation and removal of slag for offsite use as aggregate or fill material might be reasonably foreseeable, assuming the loss of knowledge of the contamination when assuming the loss of institutional controls.

Unrestricted use portion of the site

2d. The description of the scenario for the unrestricted use portion of the site could use the more realistic scenario option in the staff's LTR Analysis in SECY-03-0069 to identify the reasonably foreseeable land use in the next few decades. The selection of these land uses should reference land use plans and input from local official as SMC has already noted in Attachment 1.

3. As part of the LTR Analysis scenario selection approach, alternate scenarios that are considered less likely should also be analyzed to risk inform the analyses of both unrestricted use and restricted use without institutional controls. In the scenario description, SMC would need to clearly identify if the resident farmer and suburban resident scenarios, that it has already decided to analyze, are considered to be less likely alternate scenarios for information purposes. SMC would need to justify why the alternate scenarios are considered less likely and not reasonably foreseeable.

4. The October submittal indicated that Shieldalloy has already obtained input from the Site Specific Advisory Board for its scenario development. This approach is beneficial and consistent with the staff's expectations for public involvement in the decommissioning process. Therefore, Shieldalloy should continue to discuss scenario development with the Board as it considers the staff's comments.

Attachment 2 Exposure Pathways

1. A geotextile liner in the cap is proposed to prevent plant root intrusion into the contaminated zone, and therefore to justify the elimination of the plant food ingestion pathway. The assumption that the geotextile liner will remain effective for 1000 years should be justified. A sensitivity analysis should be done assuming no geotextile liner and the addition of the ingestion of plant food pathway. Results from this analysis will indicate if the liner is necessary for compliance or if the liner provides additional protection. It has not been NRC's policy to approve synthetic liners because of the lack of long-term performance data that can justify 1000-year effectiveness.

2. Is the geotextile liner also intended to reduce root intrusion that would increase infiltration into the pile? What parameter inputs been modified because of the presence of the liner?

Attachment 3 Input Parameters

1. In general, it is difficult to determine the applicability of the proposed parameter values for the Newfield site because insufficient information is provided on the source of the information. For example, we do not know whether TRC, 1992, which is often referenced, is for a report pertaining to the Newfield site, the Cambridge site, or some other site.

2. Not all parameters are included, for example, behavioral type parameters (such as soil ingestion, inhalation rate, fraction of time spent outdoors, etc.) are not included. Thus, we do not know how those parameters will be handled in the analysis.

3. What is the justification for assuming that the default cover depth erosion rate is appropriate for a site-specific erosion rate based on the shape of the pile and the cover material? The steep slopes of the pile designed to discourage construction of a residence could also increase the erosion rate. It is also unclear if the cover material has been selected to inhibit or prevent erosion. A sensitivity analysis could be done of the erosion rate to provide insight on the importance of erosion and the benefit of different pile cap designs (shape and materials) as well as the importance of future maintenance/repair of the cap.

4. More information needs to be provided on how sensitivity analysis will be used (e.g., to select conservative values for sensitive parameters) and how it will be conducted (e.g., multiple parameters vs. individual parameters).

Attachments 4 and 5 Distribution Parameters

No comments.

NRC STAFF COMMENTS REGARDING ACTION PLAN ITEM 11

General Comment

Shieldalloy should ensure that the information referenced in these documents (for examples those dated 1992) has been updated with current information. NRC staff recommends the licensee submit those documents heavily relied on in the preparation of the revised 2003 ER including the "1992 Environmental Report" and "RI and FS/Ecological Assessment for SMC."

Specific Comments are provided in the matrix below:

NUREG-1748 Guidance		Where Information is Located in the Decommissioning Plan (Section Identifier)	Where Information is Located in the 1992 Environmental Report (Section Identifier)	Supplemental Information	Environmental Review Response
Section Identifier	Requirement				
6.1	Introduction of the Environmental Report	--	--	See above.	The introduction should include a brief description of the proposed action , a brief summary of pertinent statutes and regulations and location of the proposed action and relevant background information. Key dates and deadlines should also be listed to establish the time frame for the proposed action.
6.1.2	The Proposed Action	Section 8	--	The proposed action is to safely decontaminate the SMC property, reducing residual radioactivity that permits release for unrestricted use, to safely contain all residual radioactive materials under a protective cap, and to maintain a "possession only" license to ensure the continuation and effectiveness of institutional controls.	Decommission Schedule in Section 8.5 of the ER may need to be revised.

NUREG-1748 Guidance		Where Information is Located in the Decommissioning Plan (Section Identifier)	Where Information is Located in the 1992 Environmental Report (Section Identifier)	Supplemental Information	Environmental Review Response
Section Identifier	Requirement				
6.1.3	Applicable Regulatory Requirements, Permits and Required Consultations	--	--	10 CFR 40, 10 CFR 20, License No. SMB-743, and the air permits shown in Attachment 1, below.	Recommend listing regulations, permits, and required consultations including Section 106 of the National Historic Preservation Act, Endangered Species Act, Occupational Safety and Health Act, and Executive Orders (12898, 13175 etc.)
6.2	Alternatives	Section 6 and 7	--	No action, off-site disposal of all residual radioactivity, and confinement of residual radioactivity under an engineered cap, followed by "possession only" licensing.	Refer to discussion on "possession only" license in DP.
6.2.1	Detailed Description of the Alternatives	Section 6 and 7	--		Refer to discussion on "possession only" license in DP.
6.2.1.1	No-action Alternative	Section 6.1.3 and 7	--		Include brief summary of the impacts should the no-action alternative be chosen.
6.2.1.2	Proposed Action	Section 6.1.1, 7 and 8	--		Include brief summary of the impacts should the proposed action alternative be chosen; Measures used to mitigate impacts, restoration actions and proposed monitoring.

NUREG-1748 Guidance		Where Information is Located in the Decommissioning Plan (Section Identifier)	Where Information is Located in the 1992 Environmental Report (Section Identifier)	Supplemental Information	Environmental Review Response
Section Identifier	Requirement				
6.2.1.3	Reasonable Alternatives	Section 6.1.4	--	Off-site disposal of all residual radioactivity	Include brief summary of the major impacts should the alternatives be chosen; Measures used to mitigate impacts, restoration actions and proposed monitoring. Suggest moving discussion of Sale of Slag for Beneficial Re-use (Section 6.1.4 of the 2002 ER) to 6.2.2.
6.2.3	Cumulative Effects	None	--	--	Provide basis for no cumulative effects expected.
6.2.4	Comparison of the Predicted Environmental Impacts	Section 7	--	--	Provide summary chart or table of both radiological and non-radiological impacts.
6.3.8	Noise			The relevant information contained in the RI for SMC (prepared by TRC) will be captured in Rev. 1 of the DP.	Ensure information is current.
6.3.9	Historic and Cultural Resources			The relevant information contained in the "Cultural Resource Reconnaissance" for SMC will be captured in Rev. 1 of the DP.	Ensure information is current.
6.3.10	Visual/Scenic Resources			The relevant information contained in the RI for SMC (prepared by TRC) will be captured in Rev. 1 of the DP.	Ensure information is current.

NUREG-1748 Guidance		Where Information is Located in the Decommissioning Plan (Section Identifier)	Where Information is Located in the 1992 Environmental Report (Section Identifier)	Supplemental Information	Environmental Review Response
Section Identifier	Requirement				
6.3.11	Socioeconomic	Section 3.2	Section 2.2	--	Ensure information include community characteristics and distribution of minority and low-income populations
6.3.13	Waste Management	Section 12	--		Discuss nonradioactive waste management.
6.4.12.1	Nonradiological Impacts	--	Appendix B	To be summarized in Rev. 1 of the Decommissioning Plan	Ensure information is current.
6.4.12.2	Radiological Impacts	--	Appendix C	To be summarized in Rev. 1 of the Decommissioning Plan	Ensure information is current.
6.4.12.2.1	Pathway Assessment	Section 7	--	--	Refer to DP.
6.4.12.2.2	Public and Occupational Exposure	Section 7	--	--	Refer to DP.
6.5	Mitigation Measures	--	Section 8, 15 and 16	--	Ensure information is current.
6.6.3	Ecological Monitoring			The relevant information contained in the RI and FS/Ecological Risk Assessment for SMC (prepared by TRC) will be captured in Rev. 1 of the DP.	Ensure information is current.
6.7	Cost Benefit Analysis	Section 7	--	--	Ensure economical impacts evaluated in Cambridge DEIS are current and applicable to this site and provide basis for applicability.