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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Before the Commission

In the Matter of)	
)	
SHIELDALLOY METALLURGICAL CORPORATION)	Docket No. 40-7102-MLA
(License Amendment Request for Decommissioning the Newfield Facility))	
)	

SHIELDALLOY'S RESPONSE TO LICENSING BOARD'S "MEMORANDUM (BRINGING MATTER OF CONCERN TO COMMISSION'S ATTENTION)"

Pursuant to the Commission's Order dated June 18, 2008, Licensee Shieldalloy Metallurgical Corporation ("Shieldalloy" or "SMC") provides its response to the Atomic Safety and Licensing Board ("Board")'s "Memorandum (Bringing Matter of Concern to Commission's Attention)," LBP-08-08 (June 2, 2008) ("Memorandum"). The Memorandum refers to the Commission the Board's concern about what it perceives to be the protracted nature of the NRC Staff's ("Staff's") review of proposed plans to decommissioning two licensed materials sites, Shieldalloy's site in Newfield, New Jersey and the Department of the Army's Jefferson Proving Ground site in Indiana.¹

I. FACTUAL BACKGROUND

At the root of the concerns expressed in the Memorandum is the Board's observation that "[i]t now is a full decade since the termination in 1998 of the activity [at the Newfield site]

¹ Shieldalloy's response is limited to the history, current status and outlook of Shieldalloy's Newfield, New Jersey NRC licensed site ("Newfield site").

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generating that material under the auspices of an NRC license. Despite that lengthy period, it appears that this proceeding will remain in a state of suspension for at least another 14 months to await the completion of the NRC Staff's review of the safety and environmental aspects of the licensee's most recently submitted decommissioning plan—a review that commenced more than one and a half years ago.” LBP-08-08, slip op. at 1. The Board deems “this state of affairs to be unacceptable.” *Id.* at 2. Because of the Board's concern, it is important to describe what has happened in the last ten years and place the history of the Newfield site in proper context.

The events relevant to the Board's Memorandum can be divided into four time periods: (1) from the cessation of ore processing at Newfield in March 1998 to the filing of the initial decommissioning plan (“DP”) in August 2002; (2) from the filing of the initial DP in August 2002 to the filing of revision 1 to the DP in October 2005; (3) from the filing of revision 1 to the DP in October 2005 to the acceptance for review by the NRC Staff of revision 1a to the DP in October 2006; and (4) from October 2006 to the present. The events in each time period are summarized below.

1. March 1998 to August 2002

Shieldalloy has held since 1963 a Source Materials License from the Atomic Energy Commission, and later from the NRC, (License No. SMB-743) that originally authorized Shieldalloy to ship, receive, possess, and store source material at its facility in Newfield, New Jersey. The Source Materials License was needed because Shieldalloy manufactured Ferrocolumbium, a specialty metal product whose manufacture utilized an ore, called pyrochlore, which contained greater than 0.05 percent natural uranium and natural thorium by weight. The manufacturing process resulted in the generation of slag (in the form of large pieces of inorganic

material) and baghouse dust (dust that was formerly collected in a “baghouse”).² Both the slag and the baghouse dust contain small amounts of uranium and thorium.³ Because of the use of other raw, non-radioactive materials in the processing of pyrochlore to produce Ferrocolumbium alloy, the resulting slag and baghouse dust contain lower concentrations of uranium and thorium than the already low levels that were naturally present in the incoming pyrochlore.

Manufacturing operations continued at the Newfield site until March 1998, when production using the pyrochlore ore ceased due to adverse market conditions and the inability to make competitive bids for importing additional pyrochlore.⁴ After these operations ceased, Shieldalloy sought to find a market for the slag and baghouse dust.⁵ At the same time, Shieldalloy initiated efforts to decommission other radiologically-contaminated areas of the Newfield site.⁶ These decommissioning activities continued until 2002,⁷ and now the residual radioactivity that remains at the Newfield seventy-acre site is mainly in the slag (approximately 18,000 cubic meters), the baghouse dust (approximately 15,000 cubic meters),⁸ and smaller

² The baghouse “dust” is actually a cement-like substance that is not subject to dispersion by the wind and forms a “crust” when it encounters moisture, which serves to deter fugitive “dust” emissions. Decommissioning Plan for Newfield Facility, Volume I (October 21, 2005), ADAMS Accession No. ML053190220 (“DP Rev. 1”) at 27. The radioactive content in the baghouse dust is an order of magnitude less than the content in the slag. Id.

³ There are approximately 23 curies each of uranium and thorium in the form of slag and baghouse dust at the Newfield site. The concentration of each in the slag is approximately 400 pCi/gram. Id., footnote omitted.

⁴ Other manufacturing operations at Newfield continued until June 30, 2006, when all remaining industrial operations at the facility ceased. The manufacturing operations that continued between March 1998 and June 2006 did not involve materials requiring licenses from the NRC.

⁵ Letter from David Smith (Shieldalloy) to Michael Weber (NRC) re Source Material License No. SMB-743 Potential CANAL Lite Customers (April 20, 1998), ADAMS Accession No. ML071150271.

⁶ See, e.g., letter from David Smith (Shieldalloy) to Marie Miller (NRC) re Results of Radiological Analysis of Hauling Road Decommissioning Effort (October 13, 1998), ADAMS Accession No. ML071350530.

⁷ See, e.g., letter from Melvyn Leach (NRC) to David Smith (Shieldalloy) re removal of the G-Warehouse from the Listing of Permanent Restricted Areas (October 9, 2001), ADAMS Accession No. ML0128090317. For a description of all areas of the Newfield site that have been decontaminated and decommissioned, see DP Rev. 1 at 7-10.

⁸ Also present in small quantities are baghouse bags, “Pyrochlore supersacs,” and other radioactive materials. DP Rev. 1 at 4.

amounts of debris from the decommissioning activities, all of which are confined to the Storage Yard, a fenced-in, eight-acre restricted access area located in the northeast corner of the site.⁹

While the rest of the site was being decontaminated and released for unrestricted use, Shieldalloy continued its efforts to market the slag. On May 2, 2000 Shieldalloy requested¹⁰ and was granted¹¹ a one-year postponement to the date in which, under 10 C.F.R. § 40.42(d)(3), the decommissioning process for the remaining radioactive materials at the site should begin. This postponement, prompted by the expectation that one of several options to market the slag would come to fruition, was the only postponement ever requested by Shieldalloy to start the radiological decommissioning process for the Newfield site.

The company, with the assistance of expert consultants, successfully demonstrated the utility of the slag in steel production, but in all cases commercial opportunities did not materialize because of adverse perceptions regarding the radioactive content of the slag, rather than for technical reasons. In August 2001, the extension having expired without Shieldalloy succeeding in its marketing efforts, Shieldalloy notified the Staff pursuant to 10 C.F.R. § 40.42(d) of its intention to begin the decommissioning process that would lead to the termination

⁹ For a number of years, the Newfield site has also been undergoing non-radiological environmental remediation, including removal of contaminated soils and groundwater, under oversight by the United States Environmental Protection Agency ("USEPA") and the New Jersey Department of Environmental Protection ("NJDEP"). Most recently, in January 2006, Shieldalloy entered into a fixed price remediation contract with the TRC Companies, Inc. ("TRC"), an environmental remediation company, to address the non-radiological environmental remediation tasks at the Newfield facility. Under this agreement, TRC assumed primary responsibility for completion of most non-radiological remediation at the site. Oversight of these non-radiological remediation activities is now governed by an Administrative Consent Order with Shieldalloy and TRC approved by the NJDEP in February 2006 and by the USEPA in March 2006.

¹⁰ Letter from David Smith (Shieldalloy) to Theodore Sherr (NRC) re Request to Postpone Initiation of the Decommissioning Process (May 2, 2000), ADAMS Accession No. ML071200486.

¹¹ Letter from Philip Ting (NRC) to David Smith (Shieldalloy) re Amendment to License SMB-743 (July 5, 2000), ADAMS Accession No. ML 003750499.

of License SMB-743.¹² Shieldalloy then proceeded to prepare a decommissioning plan for the Newfield site and submitted it to the NRC in August 2002, within the one year period provided for in 10 C.F.R. § 40.42(d).¹³

Under NRC regulations, Shieldalloy had two years plus sixty days from the cessation of operations using source material at Newfield to notify the NRC of the cessation and initiate the preparation of a decommissioning plan. 10 C.F.R. § 40.42(d)(3). Shieldalloy obtained a one year extension of that deadline (i.e., until August 2001), and then proceeded to prepare and file a decommissioning plan within the one year allowed by the regulations. Thus, the Board's perception that "[f]rom 1998 to 2001, the Staff permitted Shieldalloy to delay development of a decommissioning plan" and that subsequently Shieldalloy was granted by the Staff "an additional year to prepare a decommissioning plan" (LBP-08-08, slip op. at 8) is incorrect. Only one of those four years represents a time extension given to Shieldalloy by the NRC Staff.

In summary, during that four year period Shieldalloy proceeded diligently to decommission and release for unrestricted use the rest of the site, while attempting to commercialize the remaining radioactive materials.¹⁴ Thus, any perception that Shieldalloy and the NRC Staff were not diligently pursuing the ultimate decommissioning of the Newfield site during the 1998-2002 period would be erroneous.

¹² Letter from David Smith (Shieldalloy) to Theodore Sherr (NRC) re Intent to Terminate Source Material License No. SMB-743 (August 27, 2001), ADAMS Accession No. ML012570371.

¹³ Decommissioning Plan for the Newfield Facility, Rev. 0 (August 28, 2002), ADAMS Accession Nos. ML022800283, ML022800312, ML022800324, ML022800327, ML022800331, and ML022800342 ("DP Rev. 0").

¹⁴ As noted above, Shieldalloy worked diligently throughout this four-year period commercialize the slag product, under the trade name CANAL, for use as an additive in the steel industry. See n. 5, supra.

2. August 2002 to October 2005

Shieldalloy's initial DP requested license termination under the restricted conditions approach set forth in the License Termination Rule ("LTR"), 10 C.F.R. §§ 20.1401 through 20.1406. Shieldalloy's plan was to "move all residual radioactive materials at the Newfield Facility to the Storage Yard, which is located on the eastern boundary of the plant. There it will be graded, topped with the excavated soils from elsewhere on the plant, capped in place, and subject to long-term maintenance and monitoring." DP Rev. 0 at Section 1.5. After this remediation was accomplished, Shieldalloy would "turn portions of the property over to the Borough of Newfield, to Gloucester County, or to the State of New Jersey, along with all funds designated for long-term (1000-year) maintenance of the restricted release areas as a wildlife sanctuary." *Id.*, Section 16.4. At the time, such an approach appeared feasible to the Company because Shieldalloy had already begun undertaking a similar decommissioning process with the NRC and the State of Ohio at its facility in Cambridge, Ohio.¹⁵

There was one major difference, however, between the two sites: the different responses of the host States. The State of Ohio, through the Ohio EPA and the Ohio Department of Health, agreed to assume control over the Cambridge facility and oversee the decommissioning of the slag. The State of New Jersey, on the other hand, while a signatory to a 1997 bankruptcy settlement agreement that contemplated the decommissioning of the Newfield facility based on leaving the slag and baghouse dust at the site, had since that time refused to assume control over

¹⁵ Decommissioning of the Cambridge site began in 2001 after the State of Ohio gave approval to the portion of the DP that dealt with slag isolation. The decommissioning process was more complex at Cambridge than it would be at Newfield because it involved resolution of non-radiological environmental issues, relocation of slag in several areas around the facility, and decommissioning of two slag piles that contained the resulting NRC licensed source material. Despite the more involved decommissioning process, the slag piles at Cambridge have been covered and capped and the only major activities that need to be completed are administrative. Completion of the Cambridge site decommissioning is expected later this year.

the Newfield site and, to this day, has actively opposed Shieldalloy's plans to decommission these materials in situ.

DP Rev. 0 was rejected by the NRC Staff, among other reasons, because of the absence of a demonstrated "capability or willingness by any government entity to accept this responsibility [for long term control of the site] in perpetuity."¹⁶ The Staff also pointed out that Shieldalloy had not demonstrated "the willingness of [governmental] entities to accept the funds to be provided and that they are sufficient for control and maintenance as well as resolving concerns over long-term liability due to potential engineered cell/cap repair after transfer of ownership. Therefore, SMC has not demonstrated that its proposal is feasible."¹⁷

Between 2003 and 2005, Shieldalloy and the NRC Staff pursued potential approaches that would result in a restricted release license termination with enforceable institutional controls. In May 2003, shortly after DP Rev. 0 was rejected, the Staff issued a report to the Commissioners on various issues encountered in the initial implementation of the License Termination Rule.¹⁸ Noting that license termination under restricted conditions was proving difficult for licensees to implement due to their inability to secure Federal or State assistance in meeting the institutional control requirements, the NRC Staff recommended a "long term control" ("LTC") option whereby the license would not be terminated and the NRC itself would become involved in long-term oversight and, if necessary, assume an enforcement role after the

¹⁶ Letter from Ronald Bellamy (NRC) to David Smith (Shieldalloy) re Rejection of Decommissioning Plan for the Newfield Facility and Denial of the Exemption Request to Postpone Initiation of Decommissioning Process (February 28, 2003), ADAMS Accession No. ML030660342, Enclosure 1 at (unnumbered) p.3.

¹⁷ Id.

¹⁸ SECY-03-0069, Results of the License Termination Rule Analysis (May 2, 2003), ADAMS Accession No. ML030800158.

facility's license was amended to become a "possession only" license, to be in effect as long as restrictions on the use of the site were required.¹⁹

In response to SECY-03-0069, the Commission instructed the Staff to prepare a guidance document that addressed the issues identified in the NRC Staff report.²⁰ The NRC Staff was further directed to prepare the guidance document in draft form, obtain comments from interested stakeholders, and share the results with the Commission before issuing final guidance.

In accordance with the Commission's directive, the Staff issued a Draft Supplement 1 to its guidance document NUREG-1757, "Consolidated Decommissioning Guidance" for public comment in September 2005.²¹ 70 Fed. Reg. 56,940 (Sept. 29, 2005).²² In issuing the revised version of NUREG-1757 the NRC Staff sought, among other things, to provide guidance to licensees seeking to decommission their facilities but unable to meet the termination under restricted site conditions method of the LTR because of an inability to secure the legally enforceable institutional controls required in 10 C.F.R. §20.1403(b). In particular, the guidance elaborated on the concept proposed to the Commission by the Staff in SECY-03-0069 under which the institutional controls issue would be addressed by amending (rather than terminating) an existing license, after completion of decommissioning, to a "possession only license" subject to continued NRC oversight until the release limits in 10 C.F.R. § 20.1402 were met and the

¹⁹ *Id.* at 3-4.

²⁰ Staff Requirements Memorandum ("SRM") on SECY-03-0069 (Nov. 17, 2003), ADAMS Accession No. ML033210595.

²¹ The initial three-volume version of NUREG-1757 had been issued in its entirety in 2003 (68 Fed. Reg. 54,503 (Sept. 17, 2003)). Supplement 1 was intended to update this initial version "to reflect current NRC decommissioning policy." 70 Fed. Reg. at 56,941.

²² The Staff made modifications to the document in response to the comments it received and issued NUREG-1757 in its current form in September 2006, posting the revised version on the NRC website in October 2006, *see* <http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1757/v1/>.

license could be terminated.²³ This concept is described in Section 17.7.1 and Appendix M, Section M.3 of NUREG-1757.

The Newfield site had been one of the sites analyzed by the Staff in SECY-03-0069.²⁴ The Staff determined that implementation of the long-term control option at Newfield would be beneficial.²⁵

Shieldalloy developed a revision to the DP based on interim guidance issued by the NRC Staff pending the final approval of the proposed modifications to NUREG-1757.²⁶ Rev.1 to the DP for the Newfield site was submitted to the NRC in October 2005.

Thus, it was the need to develop an alternative plan for managing the residual radioactivity at Newfield that did not require involvement by the State of New Jersey that added several years (2003-2005) to the process. During those years, Shieldalloy and the NRC Staff worked diligently to develop a DP that met regulatory requirements and also provided adequate protection of public health and safety based on the long term storage of the materials at the site under the control of the NRC.

²³ SECY-03-0069 at 25-27.

²⁴ Id., Attachment 1, Section 3.5.3, ADAMS Accession No. ML030870012.

²⁵ Id., Attachment 11, ADAMS Accession No. ML031190138. For the Newfield site, implementation of the LTC option could be beneficial by resolving site-specific issues, facilitating decommissioning, and minimizing the potential for future decommissioning funding shortfalls. Id.

²⁶ In April 2004, while the revisions to NUREG-1757 were in preparation, the Staff issued Interim Guidance for use of a long-term control possession-only license at Shieldalloy's Newfield site. NRC Staff Interim Guidance for a Long-Term Control Possession Only License at Shieldalloy Newfield Site, New Jersey (April 15, 2004), ADAMS Accession No. ML041320436. Shieldalloy prepared DP Rev. 1 based on that Interim Guidance. As the revision to NUREG-1757 was finalized, Shieldalloy modified its DP to incorporate the revised guidance.

3. October 2005 to October 2006

The NRC Staff rejected DP Rev. 1 in January 2006, three months after its submittal.²⁷

The Staff's rejection letter raised questions on four areas of the DP: (1) dose modeling; (2) surface water hydrology and erosion protection; (3) restricted use/institutional controls; and (4) financial assurance.²⁸ Shortly thereafter, in March 2006, Shieldalloy and the NRC Staff met to discuss the deficiencies identified by the Staff with DP Rev. 1 and ways to remedy them.²⁹ Three months later, Shieldalloy submitted the current revision to the DP, Rev. 1a, which sought to address the Staff's comments and concerns regarding the previous revision. The basic approach proposed in Rev. 1a, as in previous revisions, is to have the slag and baghouse dust consolidated into a pile which will be graded, shaped and covered with a suitable engineered barrier of rocks, soil and other materials. Shieldalloy will retain primary responsibility for implementation of the decommissioning plan and for maintenance of any controls, such as cover material and access limitations, necessary to protect public health and safety, while the NRC will retain oversight and enforcement responsibility, including license renewal reviews every five years. Rev. 1a was accepted for technical review by the NRC Staff on October 18, 2006.³⁰

There can be no question that both Shieldalloy and the NRC Staff acted expeditiously to resolve the issues identified by the Staff with respect to Rev. 1 of the DP. The one-year period

²⁷ Letter from Daniel Gillen (NRC) to David Smith (Shieldalloy) re Rejection of the Revision 1 to the Decommissioning Plan for the Newfield Facility (January 26, 2006), ADAMS Accession No. ML60180551.

²⁸ *Id.*, Attachment.

²⁹ Letter from Kenneth Kalman (NRC) to David Smith (Shieldalloy) re 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 (May 12, 2006), ADAMS Accession No. ML061070401.

³⁰ Letter from Keith McConnell (NRC) to David Smith (Shieldalloy) re Acceptance for Technical Review of the Decommissioning Plan for the Newfield Facility (October 16, 2006), ADAMS Accession No. ML062580126.

between submittal of DP Rev. 1 and the acceptance for review of Rev. 1a (October 2005 to October 2006) is clearly reasonable.

4. October 2006 to Present

In the twenty months that have elapsed between the acceptance of DP Rev. 1a by the Staff for technical review and today, the following events have transpired:

- In December 2006, the NJDEP filed with the Commission a petition for rulemaking and request for hearing on the Staff's guidance document NUREG-1757, seeking the rescission of the portions of NUREG-1757 that set forth the recommended LTC license termination procedures. The NJDEP also requested a stay of any NRC Staff action on the Rev. 1a of the DP.³¹
- In January 2007, the NJDEP and other individuals and entities submitted requests for a hearing on the DP, leading to the institution of the current licensing proceeding.³²
- In March 2007, the Staff transmitted 14 environmental RAIs to Shieldalloy.³³
- In March 2007, the NJDEP submitted to the Staff 228 comments on the DP.³⁴

³¹ The requests for a hearing on NUREG-1757 and for a stay were denied by the Commission in January 2007. Shieldalloy Metallurgical Corporation and NUREG-1757, Order (January 12, 2007).

³² The NJDEP also filed a rulemaking petition seeking to invalidate portions of NUREG-1757, as well as a review petition in the U.S. Court of Appeals for the Third Circuit, again seeking judicial invalidation of portions of the NUREG. The rulemaking petition is still pending. The suit was dismissed for lack of jurisdiction, NJ v. NRC, Nos. 06-5140, 07-1559, 07-1756 (3d Cir., May 21, 2008), ADAMS Accession No. ML081480168.

³³ Request for Additional Information for Environmental Review of Proposed Decommissioning Plan of Shieldalloy Metallurgical Corporation, Newfield, New Jersey (March 19, 2007), ADAMS Accession No. ML0707801390.

³⁴ Comment of Donna L. Gaffigan on Behalf of New Jersey Department of Environmental Protection Re: Shieldalloy Metallurgical Corporation Decommissioning Plan, Rev. 1a (March 16, 2007), ADAMS ML0709201581.

- March 2007 – June 2008: Numerous conference calls were held between Shieldalloy and the Staff to discuss the RAIs issued by the Staff and Shieldalloy’s proposed methodology for performing additional investigations and analyses requested by the Staff in the RAIs.³⁵
- In April 2007, Shieldalloy responded to the environmental RAIs.³⁶
- In July 2007, the Staff transmitted 73 safety RAIs to Shieldalloy.³⁷
- In July 2007, Shieldalloy, NJDEP, and the Staff participated in groundwater sampling of wells at the Newfield site.³⁸
- In September 2007, the USEPA submitted to the NRC 283 comments on the DP.³⁹
- In November 2007, Shieldalloy provided a partial response to the safety RAIs.⁴⁰
In its response, Shieldalloy noted that several RAIs call for the performance of additional tests and analyses, protocols for which would have to be developed.⁴¹

³⁵ See Attachment 1 to Shieldalloy’s Submittal Regarding Chronology of Events Related to the Decommissioning of the Newfield, NJ Facility (May 8, 2008) (ADAMS Accession No. ML081350612). A February 28, 2008 internal Staff memorandum describes some of the then upcoming conference calls and the items in the RAIs to which they relate (ADAMS Accession No. ML080520001). The NJDEP has participated in most of these calls.

³⁶ Response to Request for Additional Information for Environmental Review of Proposed Decommissioning Plan of Shieldalloy Metallurgical Corporation, Newfield, New Jersey (April 24, 2007), ADAMS Accession No. ML071170305.

³⁷ Request for Additional Information, Shieldalloy Metallurgical Corporation Decommissioning Plan (July 5, 2007), ADAMS Accession No. ML071640287.

³⁸ Inspection No. 04007102/2006001, Shieldalloy Metallurgical Corporation, Newfield, New Jersey (January 11, 2008), ADAMS Accession No. ML080170065.

³⁹ U.S. EPA Comments on Shieldalloy Metallurgical Corporation’s Decommissioning Plan for Newfield, NJ Site (September 26, 2007), ADAMS Accession No. ML072820048.

⁴⁰ Response to July 5, 2007 Request for Additional Information (November 9, 2007), ADAMS Accession No. ML073321281.

⁴¹ Id. For example, safety RAI No. 5 states: “An evaluation of potential leachate (radionuclides and other inorganic materials) movement from the consolidated radioactive materials (slag and bighthouse dust) to the
(Footnote continued on next page)

Shieldalloy advised the Staff that the information resulting from the requested analyses would require significant additions and modifications to the DP, making it necessary to develop and submit a new revision (1b) to the document.⁴²

- In May 2008, Shieldalloy provided details to the Staff of the methodology it intends to use on its leachability tests and analyses.⁴³ There have been subsequent conference calls between Shieldalloy and the NRC Staff to further define the proposed methodology for those tests.
- On June 2 and 3, 2008 members of the NRC Staff team traveled to the Newfield site to inspect the slag and baghouse dust storage areas to further refine the protocols for sampling and leach rate testing of slag and baghouse dust.⁴⁴

Following the site visit, Shieldalloy submitted a revised sampling and testing approach to the Staff. The revised approach provides updated information on the number and location of samples and the test methodology, explains which laboratories will be conducting the leach rate testing and what procedures will be followed, and states when the laboratories can be expected to complete the tests.⁴⁵

Shieldalloy expects that it will soon come to final agreement with the Staff on a

saturated zone (Upper Cohansey sands) needs to be provided for current and future conditions. Path Forward No. 5a: SMC should perform an evaluation of current and potential leachate generated from the consolidated radioactive materials. This evaluation should include the current and potential leachate transport through the vadose zone into the saturated zone with site developed/estimated hydraulic conductivities (K) and distribution coefficients (Kd). The evaluation of current and potential leachate generated by the proposed action should consider all types of accumulated materials including the various types of slag, baghouse dust, building rubble, and soil." Id.

⁴² Id.

⁴³ May 7, 2008 letter from David Smith (Shieldalloy) to Jack Hayes (NRC) forwarding information on leachability and radionuclide transport tests and analyses, ADAMS Accession No. ML081430471.

⁴⁴ NRC Staff's Seventh Status Report to the Board (June 6, 2008), ADAMS Accession No. ML081580624.

⁴⁵ Id.

sampling and testing program whose results, once completed, will allow the preparation and submittal of a revised DP.⁴⁶

As the above listing of events reveals, Shieldalloy and the NRC Staff have been in constant communication and interaction since the revised DP was docketed in October 2006. The fact that these interactions have extended for over a year is not, as the Board perceives, the absence of “anything even remotely approaching urgency with regard to the resolution of the decommissioning issues on the table.” LBP-08-08, slip op. at 13. Instead, it is only evidence of the complexity of some of the technical issues involved and the desire by Shieldalloy and the NRC Staff to develop an accurate characterization of the site towards the evaluation of the long term radiological impact of the proposed in situ remediation program.⁴⁷

II. DISCUSSION

Several aspects of the Licensing Board’s memorandum warrant elaboration to avoid potential misunderstanding by the Commission of the status and state of progress of the Newfield site decommissioning process. They are: (1) the current status of the site; (2) the possibility of “interim remediation;” and (3) the possibility of expediting the Staff review process.

⁴⁶ The NJDEP has been a participant in the discussions between Shieldalloy and the NRC towards the development of the proposed test program.

⁴⁷ The Board states that what is involved in the decommissioning of the Newfield site “is nothing more than a slag pile. As such, we would think that the Staff inquiry here rates relatively low in comparative complexity among the numerous site decommissioning proposals it confronts.” LBP-8-08, slip op. at 13. However, as the Staff has pointed out, there are no well-established protocols to test leaching from slag materials, which accounts for the extensive discussions between the parties. NRC Staff’s Seventh Status Report at 3. The Board, of course, recognizes that the duration of the Staff’s review “in a particular case will be largely dependent upon the complexity of the safety and environmental issues presented in that case.” LBP-8-08, slip op. at 12. It may be that the Board may not have been fully aware of the technical issues involved in the Staff’s review of the DP in this case.

A. Current Status of the Site

As discussed above, it would be erroneous to assume that nothing has been done to decontaminate and decommission the Newfield site since Ferrocolombium manufacturing operations ceased in 1998. Since that time, Shieldalloy has proceeded diligently to decommission the radioactively contaminated manufacturing areas and other facilities at the site, including the Haul Road through which materials traveled in and out of the Newfield site; the American Air Filter Baghouse; the G-Warehouse where plant source material was stored; the A-Warehouse; the East End of the Storage Yard; and the production buildings D111, D102 and D112.⁴⁸ Those facilities were decommissioned, the remaining material covered by the NRC license was consolidated in the slag hold area, and the final survey of the former manufacturing buildings was made and accepted by the NRC in December 2001.⁴⁹ Additional decommissioning activities were conducted at the site between December 2001 and August 2002.⁵⁰ In addition, substantial non-radiological remediation has occurred and is still occurring at the site.

While decommissioning of the slag and baghouse dust has necessarily been delayed pending approval of the DP, it would also be erroneous to conclude that no provision has been made to prevent radiation exposures from these materials to the public. These materials are located in a remote, "restricted" area of the site, are surrounded by a perimeter fence, and are accessible only by a dirt road. To obtain access from the main road running adjacent to the site, a member of the public would need to cross a parking lot, pass through a locked gate, proceed

⁴⁸ DP Rev. 1 at 7-10.

⁴⁹ NRC letter (Ronald Bellamy) to Shieldalloy (Nigel Morrison) re Inspection, SMC, Newfield, N.J. Site (Dec. 18, 2001), ADAMS Accession No. ML013530374.

⁵⁰ NRC letter (Ronald Bellamy) to SMC (David Smith) re NRC Acceptance of Notification Regarding Intent to Remove Buildings (May 1, 2002), ADAMS Accession No. ML021220122.

through the entire length of the facility, and then pass through a second locked gate into the restricted area. Signs are posted in the restricted area to warn potential trespassers of the presence of radioactivity. Exposure rates at the perimeter fence, which are measured every quarter, show exposures ranging from background to approximately 130 microR per hour at the point closest to the stockpile of slag.⁵¹ A recent dose assessment prepared for Shieldalloy concludes that a hypothetical member of the public would have to be stationed at the point of closest proximity to the Storage Yard along the perimeter fence for 720 consecutive hours before receiving the maximum 100 millirem TEDE dose limit specified in 10 CFR 20.1301(a)(1).⁵²

With respect to the liquid pathways, measurements by Shieldalloy demonstrate that radionuclide concentrations on the Hudson's Branch adjacent to the Newfield site present an insignificant radiological risk to the public.⁵³ Groundwater measurements show that the radiological levels in the groundwater under the Newfield site cannot be distinguished from background.⁵⁴ Shieldalloy believes there is no evidence that the continued presence of the radioactive materials at the Newfield site poses any threat to public health and safety.

⁵¹ Rev. 1 to the DP states: "As a licensee, SMC is required by 10 CFR 20.1301 and 1302 to demonstrate that members of the general public do not incur a radiation dose in excess of 100 millirem TEDE in any calendar year. The maximum measured ambient exposure rate at the fence line around the Storage Yard is approximately 130 microR per hour with an average measured rate of approximately 30 microR per hour and a nominal radon dose rate from baghouse dust emanation of approximately 8.2×10^{-3} microR per hour. Monitoring records over the past five years demonstrate that no member of the public has incurred a radiation dose that even approaches the regulatory limit." DP Rev. 1 at 79, Section 7.2.1.2, footnotes omitted.

⁵² Integrated Environmental Management, Inc., "Prospective Dose Assessment for Members of the Public," May 21, 2008.

⁵³ DP Rev. 1 at 29.

⁵⁴ *Id.* at 30. The issue of radionuclides in groundwater has been raised as a concern by NJDEP. However, elevated levels of radionuclides in groundwater are ubiquitous in Southern New Jersey due to the presence of a naturally occurring subterranean formation. U.S. Geological Service, "Natural Radioactivity in, and Inorganic Chemistry of, Ground Water in the Kirkwood-Cohansey Aquifer System, Southern New Jersey, 1983-89" (1995).

B. Possibility of Interim Protective Measures

The Board's Memorandum indicates that, while the DP submitted by Shieldalloy remains under review by the Staff, "the [slag] pile will not even have the assertedly inadequate cover called for in the challenged decommissioning plan, or some type of alternate cover, to reduce ongoing impacts." LBP-08-08, slip op. at 13. The Board's assessment, however, is based on two faulty premises: (1) that there are "ongoing impacts" which warrant addressing in some manner to protect public health and safety, and (2) that it is feasible to install some type of "cover" on a temporary basis to reduce those impacts.

The first issue has been discussed above. Even if the ultimate resolution to the DP is delayed by a substantial period of time, the health and safety impacts of the presence of the slag and baghouse dust at the Newfield site will be insignificant because there have been no releases of radioactivity to off-site locations or to the groundwater, and because access to the Storage Yard remains controlled as required by current license conditions. On the second issue, Shieldalloy is strictly limited by its current materials license to "[d]ecommissioning activities in accordance with statements, representations and procedures contained in application dated September 15, 1995 and supplements dated November 28, 1995, August 11, September 24, September 26, and November 25, 1997, March 25, 1998, January 28, March 10, March 18, June 1, September 9, September 23, 1999, May 2, May 22, 2000, March 30, and August 27, 2001, and August 30, 2002."⁵⁵ The activities covered by the current license do not include the deployment of a temporary "cover" over the slag and baghouse dust. Such a cover would have to be designed. It would need to be proposed to the NRC Staff and its effectiveness demonstrated.

⁵⁵ Amendment No. 8 to License No. SMB-743 (November 4, 2002), para. 9, ADAMS Accession No. ML023110336.

The additional radiation doses to the workers and the public associated with the deployment of such a cover would have to be estimated and shown to meet cost-benefit requirements. Formal approval of the temporary cover's implementation would need to be requested via an amendment to the existing license. The proposed amendment would be subject to the notice and opportunity to request a hearing provided in the Commission regulations, and if challenged could give rise to an adjudicatory proceeding parallel to the instant one. Given all these required steps, there is no assurance that a temporary "cover," even if technically feasible and cost-effective, could be deployed in a significantly shorter schedule than that of the ongoing proceeding before the Board below. In short, Shieldalloy respectfully suggests that implementation of "interim" protective measures at Newfield is neither practical nor necessary.

C. Possibility of expediting the review process

The Board states that it is "not suggesting that there are steps that might be taken at this point to accelerate materially decommissioning in the specific proceedings discussed herein. In the totality of the present circumstances, that might well be beyond achievement." LBP-08-08, slip op. at 16. The Board goes on to suggest that the Commission "might, however, wish to make clear to the Staff that it will look with disfavor upon any further slippage in . . . the August 2009 completion of the Shieldalloy technical review. . . ." *Id.*

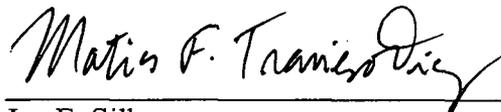
While Shieldalloy appreciates and shares the Board's desire that the Staff's reviews be completed expeditiously, we firmly believe that it would be impractical, and probably counterproductive, for the Commission to impose any deadlines on the Staff review process. Completion of that process will be dictated by the Staff's review of the revisions to the DP once submitted and any further questions that may emerge from that review. Shieldalloy has been working and continues to work closely with the Staff to finalize as soon as possible the protocols

for the additional leachability tests on slag and baghouse dust from the Newfield site which the Staff has required, following which Shieldalloy will be able to promptly carry out the tests and complete the revisions to the DP incorporating the test results.⁵⁶ The schedule for completing the Staff's review should be driven by technical considerations, not artificial deadlines which have no basis in the public health and safety.

CONCLUSION

For the reasons stated above, Shieldalloy submits that the Board's concerns, as they refer to Shieldalloy's Newfield site, are being adequately addressed in the current NRC Staff review process, and that no action by the Commission is required at this time.

Respectfully submitted,



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Dated: July 3, 2008

⁵⁶ The Board suggests that "it often will be in the economic interest of a licensee to put off as long as possible implementing expensive remediation measures, whether determined necessary by the NRC Staff or by a licensing board, in its consideration of an intervenor's challenge to a submitted decommissioning plan." LBP-08-08, slip op. at 12. In a footnote to the quoted text, the Board goes on to state that "[a] Although we are not prepared to conclude that such a consideration played a part in Shieldalloy's conduct since it terminated the licensed activity a decade ago, the fact remains that it is faced with at least the possibility of being ordered at day's end to do much more by way of site remediation than it now proposes." *Id.* at n. 36. Lest there be any misunderstanding, Shieldalloy has had financial assurance mechanisms in place since 1999 to fund its proposed decommissioning mechanism for Newfield. Shieldalloy has spent millions of dollars to date in the radiological and environmental remediation of the site, and is spending considerable time and resources in the DP licensing proceeding below and the related Staff reviews. It has no interest, financial or otherwise, in delaying completion of the proceeding.

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

Before the Commission

In the Matter of)	
)	
SHIELDALLOY METALLURGICAL CORPORATION)	Docket No. 40-7102-MLA
(License Amendment Request for Decommissioning the Newfield Facility))	ASLBP No. 07-852-01-MLA-BD01
)	
)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "Shieldalloy's Response to Licensing Board's 'Memorandum (Bringing Matter of Concern to Commission's Attention)'" dated July 3, 2008, were served on the persons listed below by deposit in the U.S. Mail, first class, postage prepaid, and where indicated by an asterisk by electronic mail, this 3rd day of July, 2008.

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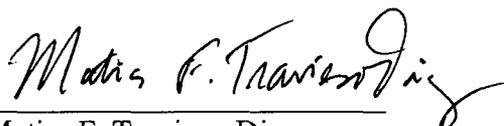
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