

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Dale E. Klein, Chairman
Gregory B. Jaczko¹
Peter B. Lyons
Kristine L. Svinicki

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

CLI-09-01

MEMORANDUM AND ORDER

This proceeding stems from Shieldalloy Metallurgical Corporation's (Shieldalloy or licensee) request for a license amendment to authorize the decommissioning of its Newfield Facility, located in Newfield, New Jersey.² In March 2007, the Atomic Safety and Licensing Board granted the New Jersey Department of Environmental Protection's (New Jersey) hearing request on the adequacy of Shieldalloy's proposed

¹ Section 201 of the Energy Reorganization Act, 42 U.S.C. Section 5841, provides that action of the Commission shall be determined by a "majority vote of the members present." Commissioner Jaczko was not present when this item was affirmed. Accordingly the formal vote of the Commission was 3-0 in favor of the decision. Commissioner Jaczko offered a separate dissenting opinion which follows this decision.

² See Notice of Consideration of Amendment Request for Decommissioning for Shieldalloy Metallurgical Corp., Newfield, NJ and Opportunity to Request a Hearing, 71 Fed. Reg. 66,986 (Nov. 17, 2006).

Decommissioning Plan (Revision 1a).³ More recently, the Board issued a Memorandum bringing certain issues to the Commission's attention.⁴ Both the licensee and the NRC Staff sought leave from the Commission to respond to the Board's Memorandum.⁵ The Commission allowed any party to respond.⁶ The NRC Staff, the licensee, and New Jersey submitted briefs to the Commission.⁷

The Board's Memorandum raised essentially two concerns. The Board's initial concern was the extraordinarily slow pace of this proceeding. Originally, the Staff estimated that it would issue a final Safety Evaluation Report (SER) in January 2008, a Draft Environmental Impact Statement (DEIS) in March 2008, and a Final Environmental Impact Statement (FEIS) in October 2008.⁸ According to the Staff's latest estimates, the DEIS will not be issued until October 2009, and the final SER and FEIS not until December 2009 and July 2010, respectively.⁹ Given the circumstances, a hearing on the adequacy of Shieldalloy's Decommissioning Plan would not be held until well over 3 years after the Board granted New Jersey's hearing request, and over a decade since

³ LBP-07-5, 65 NRC 341, 353-59 (2007). The Board admitted one contention, and deferred consideration of New Jersey's other contentions pending completion of the Staff's safety and environmental review. See *id.* at 359-62.

⁴ See Memorandum (Bringing Matter of Concern to Commission's Attention), LBP-08-08, 67 NRC ____ (slip op. June 2, 2008)(Board Memorandum).

⁵ *Shieldalloy's Unopposed Motion for Leave to File a Response to Licensing Board's Memorandum (Bringing Matter of Concern to Commission's Attention)*(June 10, 2008); *NRC Staff's Motion for Leave to Respond to LBP-08-08* (June 12, 2008).

⁶ See Order (June 18, 2008)(unpublished).

⁷ *NRC Staff's Response to LBP-08-08* (July 3, 2008)(Staff Response); *Shieldalloy's Response to Licensing Board's 'Memorandum (Bringing Matter of Concern to Commission's Attention)'*(July 3, 2008)(Shieldalloy Response); *State of New Jersey's Reply to the July 3, 2008 NRC Staff and Shieldalloy Submissions to the Commission* (July 10, 2008)(New Jersey Reply).

⁸ See Board Memorandum, slip op. at 5.

⁹ See *NRC Staff's Tenth Status Report* (December 5, 2008).

Shieldalloy ceased manufacturing operations (in 1998).¹⁰ The current delay stems at least partially from Shieldalloy's intention to submit another revision of its Decommissioning Plan, to address many of the issues raised by the Staff in Requests for Additional Information (RAIs) transmitted in July 2007.¹¹

The Board also expressed concern over whether there are adequate protective measures in place to protect nearby residents.¹² Recognizing its lack of authority to oversee or "inquire further" into the Staff's performance of its regulatory oversight responsibilities, or to "order some [interim] corrective measures," if any are called for, the Board referred its concerns to the Commission.¹³

Addressing the Board's Memorandum, the Staff responds that Shieldalloy already has "certain protective measures in place at the Newfield site that are essentially the same as those contemplated by the [Decommissioning Plan]."¹⁴ These include security and access control measures, and a radiation monitoring program. The Staff also states that Shieldalloy has built a berm on the south side of the storage area at the Newfield site, to assure that rainwater runoff will not transport baghouse dust outside the

¹⁰ See Board Memorandum, slip op. at 1, 6-8.

¹¹ See Board Memorandum, slip op. at 9; Staff Response at 12-15. As the Staff explains, a significant issue has been determining proper leach rate testing and sampling protocols to assess the leachability of slag and baghouse dust at the Newfield site. See Staff Response at 14-15. In its Ninth Status Report, the Staff indicated that Shieldalloy finalized its leach rate testing protocol in September 2008, and plans to take more than 50 additional samples from the nine slag and baghouse dust piles at the site. See *NRC Staff's Ninth Status Report* (Oct. 10, 2008) at 2.

Prior to accepting for technical review Shieldalloy's Decommissioning Plan Revision 1a, the Staff had rejected for docketing other earlier-submitted decommissioning plans for the Newfield site. The Staff rejected Revision 0 (submitted August 2002) and Revision 1 (submitted October 2005). See Board Memorandum, slip op. at 8-9.

¹² See *id.*, slip op. at 6-7, 11-12, 13.

¹³ *Id.*, slip op. at 14.

¹⁴ Staff Response at 15.

storage area.¹⁵ The Staff stresses that there is “no evidence of any violation or potentially hazardous condition that would support ordering Shieldalloy to implement an engineered barrier [cover over the slag and baghouse dust] as an interim protective measure.”¹⁶ The Staff further stresses that it “continues to monitor and inspect the site,” and that recent “inspections have not revealed any current threat to public health or safety associated with the Newfield site.”¹⁷

Based upon the information provided to us, we have no reason to conclude that there are ongoing violations of NRC health and safety standards at the Newfield site. We note, further, that New Jersey concurs in the Staff’s assessment that an interim protective barrier over the slag and baghouse dust at the site “may prolong and complicate decommissioning.”¹⁸

New Jersey, however, urges the Staff (and Shieldalloy) to consider whether other interim measures are warranted to prevent any “contamination until the final decommissioning is completed.”¹⁹ In particular, New Jersey raises a concern about the Hudson Branch Creek, located near the Newfield facility. New Jersey claims, for example, that sampling results from the creek’s surface water and soil sediment show elevated levels of uranium-238, thorium-232, and radium-226.²⁰ New Jersey requests an adequate characterization of this contamination, an investigation into the source of

¹⁵ *Id.* at 17.

¹⁶ *Id.* at 18.

¹⁷ *Id.* at 6.

¹⁸ New Jersey Reply at 8.

¹⁹ *See id.*

²⁰ *See id.* at 7, and attached Exhibit 2 at 1-3.

contamination, a plan to prevent any ongoing contamination (if there is any), and remediation of existing contamination.²¹

While the Staff's brief does not address the Hudson Branch contamination, the Commission is aware that the Staff has issued Requests for Additional Information, calling on Shieldalloy to provide additional characterization data and other information on the contamination.²² Apparently, the Staff has not yet resolved whether the NRC (or New Jersey) has jurisdiction over the radiological contamination in the Hudson Branch.²³ The NRC will assert jurisdiction if the contamination is attributable to Shieldalloy or another NRC licensee.²⁴ After reviewing Shieldalloy's responses and information from other sources, the Staff will determine whether the NRC has jurisdiction over the radiological contamination and, if so, whether and to what extent the contamination requires remediation.²⁵ We expect that the Staff will timely and thoroughly address these questions.

In addressing the creek contamination, New Jersey also refers to the berm constructed on the south side of the storage area as an interim protective measure. Because the berm "does not surround the entire pile" of materials, New Jersey seeks additional characterization of the soil and any surface water outside the fence-line, to assure that runoff to the north, east, and west sides of the pile does not pose an offsite

²¹ New Jersey Reply at 9.

²² See, e.g., Letter from Keith McConnell, NRC, to Ms. Patricia Gardner, New Jersey Department of Environmental Protection (Aug. 18, 2008)(McConnell Letter)(ADAMS ML082040537); Request for Additional Information, Cover Letter (July 5, 2007)(ADAMS ML071640267)(Cover Letter), and attached RAIs (ADAMS ML071640287) at 7-8.

²³ See McConnell Letter at 1.

²⁴ See *id.* at 2.

²⁵ See *id.*

contamination concern.²⁶ New Jersey states that there are materials other than slag, such as construction debris and contaminated soil, “that could potentially leave the site via runoff.”²⁷ Whether additional data are needed regarding the effectiveness of the existing berm to deter potential offsite migration is a matter that the Staff should discuss with Shieldalloy and New Jersey.

We acknowledge the Board’s concern with the extraordinary lag of time between Shieldalloy’s cessation of operations and this adjudicatory proceeding on a decommissioning plan, and the continuing delays since the proceeding began. The Board made “clear” that it had no “criticism of anything that the NRC Staff has substantively done in the course of its technical review,”²⁸ and we likewise discern no failure in the Staff’s technical review, which must consider and resolve all relevant safety and environmental issues. The Staff appears to be conducting a detailed, careful review, but to complete its review needs and has requested much additional information from Shieldalloy. We expect Shieldalloy to respond promptly and accurately to Staff inquiries. The Staff has advised Shieldalloy that the Staff may suspend or terminate its review of the Decommissioning Plan if Shieldalloy fails to provide “complete and high-quality responses.”²⁹

We also expect that, absent compelling circumstances, the Staff will accord sufficient priority and devote sufficient resources to meeting its current estimated safety and environmental review schedule. If in the course of its review, the Staff finds that any additional interim protective measures at the site are warranted, we expect it will take prompt appropriate action.

²⁶ New Jersey Reply at 7.

²⁷ *Id.*

²⁸ Board Memorandum at 15.

²⁹ See Cover Letter at 1.

Commissioner Jaczko, in his dissent, echoes the Board's concern with the delays in decommissioning the Newfield facility – a concern that we share. We also agree, as espoused in the dissent, that unrestricted release is the preferable method for terminating radioactive materials licenses.³⁰ But we differ with the dissent in that it addresses a generic matter that was not raised by the Board's Memorandum and offers a position on a question that is premature to address here. Many of the issues raised in the dissent are currently pending before the Board and may be dealt with in the context of the Board's adjudication, if appropriate, with the benefit of full briefing by the parties.

IT IS SO ORDERED.

For the Commission

(NRC SEAL)

/RA/

Annette L. Vietti-Cook
Secretary of the Commission

Dated at Rockville, Maryland,
this 27th day of January 2009.

³⁰ See NUREG-1757, Vol. 1, Rev. 2, Consolidated Decommissioning Guidance; Decommissioning Process for Materials Licensees (Sept. 2006) at M-1.

Commissioner Jaczko, dissenting:

I dissent from the Commission's Memorandum and Order. It is our job to make sure Shieldalloy fully cleans up this site. For two reasons, I think we may not be headed in the right direction to make sure this happens in a reasonable time. First, I believe that part of the generic guidance on decommissioning in NUREG-1757, with respect to long-term institutional control under 10 C.F.R. § 20.1403, is flawed and should be reconsidered. Should Shieldalloy follow that guidance and the Commission then find that it has to revise or withdraw it, significant delay in decommissioning the site could result. To avoid this result, the Commission could revisit that guidance now. Second, I am not convinced that the potential to achieve unrestricted release of Shieldalloy's Newfield site has been adequately explored. The following explains each of these two points in detail.

With respect to the generic guidance in NUREG-1757, the part of the guidance that applies the requirements in 10 C.F.R. Part 20 governing restricted release and in 10 C.F.R. § 40.42 governing license termination seems to me inconsistent with the text and intent of the regulations. See NUREG-1757, Vol. 1, Rev. 2, Consolidated Decommissioning Guidance; Decommissioning Process for Materials Licensees (Sept. 2006) (NUREG-1757). Specifically, the current guidance regarding the "possession only license/long term control" (POL/LTC) option appears to me logically flawed, and I believe we should generically revisit this guidance. In addition, if this flawed guidance is applied at Shieldalloy's Newfield site, significant additional delay to decommissioning this site could result. We would be remiss if we did not act now to eliminate this potential source of additional delay.

The regulations that are the basis for my concern are as follows: In short, § 40.42(c) provides that, with respect to possession, a Part 40 license, such as that held by Shieldalloy, continues in effect after expiration until decommissioning is completed.

During that time, a licensee must limit actions to those related to decommissioning and control access to restricted areas until they are suitable for release. Simply stated, the licensee must meet Part 20 with respect to the materials remaining on the site.

Further, to decommission the site under Part 20, the licensee must meet the standards in § 20.1402 for unrestricted release of the site, *i.e.*, the amount of radioactive material left on the site is not dangerous, or the licensee must satisfy § 20.1403 or § 20.1404. Under § 20.1403, the site will be considered for restricted release if further reductions in residual radioactivity necessary to comply with the provisions of § 20.1402 would result in net public or environmental harm or need not be made because residual levels associated with the restricted conditions are as low as reasonably achievable (ALARA). Whether a site is suitable for unrestricted or restricted release, however, the license is terminated upon the completion of decommissioning in accordance with Part 20. Neither the licensee nor the NRC retains any continuing obligation or jurisdiction, respectively, with respect to the site, unless new information shows that the Part 20 criteria were not met and the residual radioactivity remaining on the site could result in a significant threat to public health and safety. See 10 C.F.R. § 20.1401(c); NUREG-1757, Appendix M at M-2 to M-3. The license is terminated even if the licensee decommissions the site in accordance with alternate decommissioning criteria pursuant to § 20.1404.

In contrast to the regulations described above, all of which are directed to license termination, the guidance in NUREG-1757 introduces the concept of a “new type of possession-only license [that] is referred to in this guidance as a long-term control (LTC) license[.]” NUREG-1757, Appendix M, M.3 at M-9. Such an LTC license (or possession-only license, POL) could remain outstanding indefinitely. See *id.* at M-14 (“The LTC license is not necessarily permanent”). Nowhere is such an LTC license

mentioned or even hinted at in the License Termination Rule in Part 20, or in the rule on the timeliness of decommissioning (as applicable in this proceeding, § 40.42).

In my view, issuance of an LTC license defeats the purpose of Subpart E of Part 20, "Radiological Criteria for License Termination." Moreover, there is no need to issue such a license, because the expired license held by the licensee continues to exist in accordance with § 40.42, and *already* requires the licensee to provide "institutional control" over the site in accordance with § 40.42(c) and Part 20. Under this existing license, the NRC can require any action that it might require under the LTC license.

In my view, we should just require licensees to comply with Part 20 so that their sites may be released (with or without restrictions) and their licenses terminated. If a particular licensee is unable to do so, then we should refer the site to some other governmental agency with the authority to clean it up or request legislation from Congress to address the situation. Depending on the circumstances, a "safe storage" option during which the licensee accumulates funds for site cleanup might also be an option. In the interim until the licensee or some other agency actually cleans up the site, of course, the licensee will control access and otherwise provide adequate protection to the public health and safety with respect to the materials remaining on site by satisfying Part 20 under its existing, though expired, license.

With respect to Shieldalloy's Newfield site, I offer no opinion on whether or not Shieldalloy can or will satisfy the requirements of § 20.1403 for restricted release, or on the adequacy of its proposed decommissioning plan in light of the current generic guidance in NUREG-1757. Should the Commission decide to request the staff to reexamine that generic guidance regarding restricted release and changes result, Shieldalloy will of course need to consider those changes, and may need to make conforming changes to its proposed decommissioning plan.

With respect to the second point, whether the potential to achieve unrestricted release of Shieldalloy's Newfield site has been adequately explored, I first note the purpose of 10 C.F.R. § 40.42, which governs the expiration and termination of licenses and decommissioning of source material sites, such as the Newfield site. The purpose of the rule in which the current form of that section was promulgated was to "require timely decontamination and decommissioning by nuclear material licensees." "Timeliness in Decommissioning of Materials Facilities," 59 Fed. Reg. 36,026 (July 15, 1994) (Timeliness Rule SOC). As the Timeliness Rule SOC states, "[t]he rule is intended to reduce the potential risk to public health and the environment from radioactive material remaining for long periods of time at [materials] facilities after licensed activities have ceased." *Id.*

In general, I agree with the Licensing Board in its opinion in LBP-08-08 that the decommissioning of the Shieldalloy Newfield site is taking an unduly long time. As the Board has pointed out, licensed activities at the Newfield site ceased in 1998, and the decommissioning process began then. I also recognize, as the staff notes, that numerous areas of the Newfield site have already been decommissioned. NRC Staff's Response To LBP-08-08 at 6 (July 3, 2008). Nonetheless, slag and "baghouse dust" accumulated on an eight-acre portion of the Newfield site, among other things, remain to be decommissioned. *Id.*

Much of the delay in addressing this slag and baghouse dust and completing the decommissioning of this site can be attributed to the licensee's inadequate proposals for decommissioning. As the Board indicated, decommissioning this site would seem to be a simple matter of removing waste offsite for disposal. It only becomes complicated when the licensee seeks to dispose of the waste onsite, with all the attendant characterization work and analyses necessary to show that such a proposal satisfies

Part 20. Our implementation of our decommissioning rules at the Newfield site has resulted in radioactive material remaining at the Newfield site for a prolonged time.

The preferred path for decommissioning in Part 20 is to achieve unrestricted release of a site. The rule states:

A site will be considered acceptable for license termination under restricted conditions if:

(a) The licensee can demonstrate that *further* reductions in residual radioactivity necessary to comply with the provisions of § 20.1402 would result in net public or environmental harm or were not being made because the residual levels associated with restricted conditions are ALARA.

10 C.F.R. § 20.1403 (emphasis added). Section 20.1403 presumes that contaminated material has been removed offsite until the stated criteria are met, thus, offsite disposal is the first option. See *also*, “Radiological Criteria for License Termination,” 62 Fed. Reg. 39,058, 39,065 (July 21, 1997). In the rulemaking promulgating this section, the Commission stated that it was taking “[a] tiered approach of unrestricted use and allowing restricted use if certain conditions are met[.]” *Id.* Moreover, § 40.42 is written in terms of “releasing” buildings or areas in accordance with NRC criteria. See, e.g., 10 C.F.R. § 40.42(d).

Licensees do not get to choose between restricted and unrestricted release to suit their own purposes. Rather, the licensee should demonstrate that it will follow the “tiered” approach to decommissioning described above, and that release of the site will be restricted only if one or more of the conditions in § 20.1403(a) is met. The

unavailability of funding for decommissioning adequate to achieve unrestricted release of a site is not one of the conditions specified in § 20.1403(a). If none of the § 20.1403 conditions is met and funding is inadequate to achieve unrestricted release of the Newfield site, some other course of action, such as referral of the site to another agency for cleanup or licensee control and maintenance of the site until additional funds are accumulated, may be necessary. After all, if Shieldalloy invested the \$8 million dollars it has in remaining funds, it can reasonably be assumed that those funds would eventually reach the \$33 million dollar price tag envisioned in the application as necessary to remove the waste from the site. Even assuming only a 2% real rate of return (interest rate minus inflation), the \$8 million would grow to \$30 million in roughly 60 years. While that might be a longer time-frame than some would prefer, it is far shorter than a plan to leave the waste on site permanently.

In view of the above, the agency should be sure to explore all options for achieving unrestricted release of the entire Newfield site. Since it seems to me that we have not yet done so, I would have ordered the parties to provide us briefs on what efforts have been made to achieve unrestricted release of the site. After considering those briefs, we could have then provided direction to the Staff, if necessary. (I would *not* have requested the parties' views on whether the criteria in § 20.1403 justifying restricted release are met, as this issue will likely be the subject of the litigation pending before the Board, and is not yet ripe for us to consider.)

In sum, I believe we would be remiss in not directing the staff to explore all options aimed at achieving unrestricted release of the entire Newfield site. Because I believe the staff's current direction in entertaining the possibility of restricted release of the site is problematic with respect to long-term institutional control, and it seems to me that offsite disposal of some portion of the waste currently onsite might be accomplished, I would take a different approach.