


U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.: 040-08948
License No.: SMB-1507
Report No.: 040-08948/96001(DNMS)
Licensee: Shieldalloy Metallurgical Corporation
Facilities: Cambridge Facility
Location: Route 209 South
Cambridge, OH 43725
Date: December 16, 1996
Inspector: J. House, Senior Radiation Specialist
Approved By: B. L. Jorgensen, Chief
Decommissioning Branch 

EXECUTIVE SUMMARY

Shieldalloy Metallurgical Corporation

NRC Inspection Report No. 040-08948/96001(DNMS)

This was a routine inspection of the Shieldalloy Metallurgical Corporation facility located in Cambridge, Ohio. All licensed material was contained in the East and West slag piles. No decommissioning activities were underway as there has been no regulatory decision on the disposition of the radioactive material contained in the piles.

Observations made during an inspection of the piles indicated that security was adequate, and that radiological postings, thermoluminescent dosimetry placement, and cap erosion repair were being adequately maintained.

DETAILS

1. Background

Shieldalloy Metallurgical Corporation (SMC) purchased the Cambridge facility and assumed license responsibility from the previous site owner, Foote Mineral Company (FMC) (License No. SMB-00850) in 1987. The 120 acre site is located south of Cambridge, Ohio. FMC had processed licensable quantities of uranium and thorium contained in pyrochlore ore and tin slag. The pyrochlore ore was used to produce ferro-columbium alloys, and the tin slag was used in a process to produce tantalum oxide and niobium oxide. The radionuclides from the ore and tin slag became incorporated into waste slag which is stored in two separate piles (West and East) on the site. The ferro-columbium production started approximately in 1957 and ended approximately in 1972. SMC decontaminated the manufacturing facilities and most of the grounds, and consolidated the radioactive material into the two slag piles.

2. Description of the Radioactive Waste Slag Piles

- a. West Pile - This pile covers approximately 7.6 acres and contains low levels (picocuries per gram) of the isotopes thorium-232 (Th-232), uranium-238 (U-238) and radium-226 (Ra-226). The top of the pile is composed of at least 1-3 meters of cover material consisting of Chemfix (a clay-like material), a geotextile biobarrier cover material, and approximately 15-20 centimeters of sand. The complete cap, composed of all three constituents, covers only the top of the West Pile. Some parts of the shoulder are not completely covered and slag buttons are used as anti-erosional rip rap in these areas.
- b. East Pile - This pile is uncovered and covers approximately 2.6 acres with low levels (picocuries per gram) of Th-232, U-238 and Ra-226.

3. Security and Posting of the Slag Piles

Most of the West Slag Pile was accessible by foot from adjacent properties and via Vanadium Road. A gate with an adjoining cable fence had been erected at the dirt road that extends from Vanadium Road to the Cambridge Municipal sewerage pumphouse. Only SMC personnel and the City of Cambridge had keys to the gate. The pile was bounded by a fence and a ditch to the east and northeast, and by Chapman Run and a marshy area around the remainder. There was also a double synthetic barrier around the southern portion of the pile to hold back silt run-off. The East Slag Pile was enclosed within a chain-link security fence with a locked gate. The NRC inspector observed that the radiological postings of both slag piles were adequate.

No violations of NRC requirements were identified.

4. Surveillance Program for Security and West Slag Pile Cap Maintenance

The inspector toured both slag piles with a licensee representative. There was no evidence of human activity on either pile, the radioactive material signs were in place, and the licensee's thermoluminescent dosimetry (TLD) badges were in place. The inspector noted that there was moisture in some of the bags containing the TLDs. A licensee representative stated that this would be reviewed. Areas of erosion of the West Pile cap were marked for repair. The implementation of the surveillance program appeared to be adequate.

No violations of NRC requirements were identified.

5. Exit Meeting

At the conclusion of the inspection on December 16, 1996, the inspector met with a licensee representative to discuss the preliminary results of the inspection. The licensee did not identify any of the information provided during the inspection as proprietary.

6. Persons Contacted

*C. Scott Eves, Vice President, Environmental Services, SMC
Tom A. Matthews, Plant Manager, SMC Cambridge facility

*Denotes individual present during the exit meeting December 16, 1996

7. Inspection Procedures used

IP 83822: Radiation Protection

IP 87104: Decommissioning Inspection Procedure For Materials Licensees