

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Wednesday, June 2, 2004

From: David Dorian

To: Jim McGuire, ERRB

Subject: Removal Status
Starmet, CMI
365 Metal Drive, Hwy 80, Bamwell, SC

POLREP No.:	13	Site #:	A48Q
Reporting Period:	04/01/04 to 05/31/04	D.O. #:	
Start Date:	7/30/2002	Response Authority:	CERCLA
Mob Date:		Response Type:	Time-Critical
Demob Date:		NPL Status:	Non NPL
Completion Date:		Incident Category:	Removal Action
CERCLIS ID #:	SCD987570405	Contract #	
RCRIS ID #:			

Site Description

Starmet CMI, Inc.(Starmet), converted uranium hexafluoride (UF6) to a more stable material, uranium tetrafluoride (UF4); reduced a portion of this UF4 to uranium metal for sale; and re-plated uranium counterweights. On June 17, 2002, The South Carolina Department of Environmental Control (DHEC) issued an Emergency and Administrative Order, which required the facility to cease operations. The site posed an imminent threat to public health for the following reasons:

- Two compromised retention ponds containing approximately 550,000 gallons of uranium contaminated wastewater in excess of 250,000 pCi/L (compared to a maximum release standard of 300 pCi/L).
- Drums of pyrophoric uranium metal shavings.
- Vats of plating acids.
- Approximately 18,000 drums of radioactive material stored without the operation of the facility's ventilation and fire suppression systems.
- Radiation dose at the fence line in excess of regulatory limits for public exposure.
- Significant radiation doses emanating from metals believed to be decommissioned parts of commercial reactors.

The Emergency Response and Removal Branch (ERRB) initiated an emergency removal action at Starmet ("Site") on June 24, 2002, to prevent the release of depleted uranium from the wastewater retention ponds behind the facility and to mitigate other risks posed by hazardous materials on site. U238 is listed in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as a hazardous substance. The pond liners were in poor condition and there were indications that the liner system was failing. At the time of the initial response, the ponds were in danger of overflowing due to heavy rains. EPA treated the wastewater with by heat induced evaporation followed by solidification of the wastewater brine. The solids were disposed of in the Envirocare Landfill in Clive, Utah. Extensive work is work is required to remove the large quantities of radioactive materials remaining from Starmet operations. As a result, th Site continues to meet the emergency exemption of CERCLA section 104(c) (1)(A) and the criteria for continued response under Section 300.415(b) of the National Contingency Plan (NCP).

Effective February 13, 2004, EPA entered into a multiparty Administrative Order on Consent (AOC) with the United States Enrichment Corporation (USEC), the Department of Energy (DOE), and the Department of the Army to complete the time critical removal at the Starmet site. Under the terms of the AOC, USEC is conducting a PRP-lead removal for all waste materials associated with the conversion of USEC uranium hexafluoride to uranium tetrafluoride (UF4). Materials to be removed include approximately 5,700 drums of UF4, 3,600 drums of calcium fluoride (with radioactive residual), hydrogen fluoride, and associated dry active waste. The USEC portion of the removal accounts for approximately 38% of the total removal, and EPA has estimated the cost at approximately \$8.5 million.

Concurrently, EPA has commenced a fund-lead removal, financed by a special account established by

DOE/the Army (through the United States Judgement Fund). EPA is removing 6,200 drums of UF4 and hundreds of tons of radioactive waste metals, and other radioactive waste materials associated with production of uranium metal under DOE and Army contracts.

Current Activities

EPA ERRS contractor is preparing nine 30 cubic foot roll offs and 78 B-25 boxes filled with radioactive debris for transportation and disposal. An EPA subcontractor is using gamma spectroscopy to characterize the containers. Once the isotopic characteristics are confirmed, the B-25 boxes are sealed and painted.

USEC and its contractors are preparing to commence their removal. USEC has set up an onsite laboratory to process radioactive surveys. In accordance with the AOC, USEC has submitted the following plans: Work Plan, Radiation Safety Plan, and Health and Safety Plan.

The following tasks were completed on site from April 1 to May 31, 2004:

1. The ERRS contractor continued to lift drums of DOE UF4 from the stacks, weigh them, and secure them in super sacks (woven poly propylene with an internal liner with a 6000-lb capacity). The super sacks were surveyed, staged, and covered with plastic sheeting prior to shipment offsite to the Envirocare Landfill. This is now an ongoing process. To date, 1212 drums in 606 bags have been staged.
2. START contractor implemented confirmatory sampling plan for disposal of DOE UF4 in DU Center. Four drums from every gondola load (approximately 100 drums) were composited and sampled for alpha spec uranium and plutonium to ensure consistency with the waste profile and characterization developed for disposal.
3. ERRS completed negotiations with Envirocare in Clive, Utah, for disposal of Starmet radioactive waste and with Cavanaugh Services for transportation of this waste. The contracts have been signed with EPA Contracting Officer's approval.
4. Sumps T1, T-2 were pumped and treated in the facility's on site evaporators. Approximately 2,500 gallons of radioactive liquid was treated. The brine was solidified with polyacrylate in a 20 cubic yard roll off, which has been staged for removal.
5. The START contractor hazcated 14 drums of unknown liquid on the reduction floor. the wastewater solids for characterization prior to disposal. The drums were then consolidated and sampled for characterization.
6. ERRS contractor consolidated laboratory wastes in Starmet lab in preparation for lab pack operations.
7. General Radiation Safety activities during this period included wipe samples of all traversed areas, regular air monitoring and maintaining the plant air HEPA filtration system. ERRS contractor repaired and calibrated meters and personal air monitors.

Planned Removal Actions

FUND LEAD:

1. Packaging, transportation and disposal of approximately 6,200 drums of UF4.
2. Emptying of remaining SeaLand containers filled with radiocative debris. Known material disposed offsite; other material to be further characterized.

PRP LEAD:

1. Packaging, transportation and disposal of all UF2 and CaF2 drums derived from 6-4 conversion of USEC UF4.
2. Transport and restaging of two "heeling" cylinders of UF6.
3. Neutralization of HF remaining in Reduction Building.

Next Steps

1. The nine roll off containers and 78 B-25 boxes will be shipped to Envirocare for final disposal.
2. Wastewater treatment brine will be solidified with polyacrylate and packaged for disposal.
3. Packaging, staging and confirmatory sampling of the approximately 6,000 drums of DOE UF4 will continue.
4. Shipper will make arrangements for rail transportation of supersacks containing drums of UF4 packaged to date.

Key Issues

1. Radioactive debris from Starmet's metal melt program remains uncharacterized.

Estimated Costs *

	Budgeted	Total To Date	Remaining	% Remaining

Extramural Costs				
ERRS - Cleanup Contractor	\$10,779,400.00	\$0.00	\$10,779,400.00	100.00%
BOR--IAG	\$200,000.00	\$0.00	\$200,000.00	100.00%
START	\$758,000.00	\$0.00	\$758,000.00	100.00%
Intramural Costs				
Total Site Costs	\$11,737,400.00	\$0.00	\$11,737,400.00	100.00%

* The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The OSC does not necessarily receive specific figures on final payments made to any contractor(s). Other financial data which the OSC must rely upon may not be entirely up-to-date. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

Disposition of Wastes

Waste Stream	Quantity	Manifest #	Disposal Facility
B-25 Box#1-20 Radioactive Debris, LSA	1260 cubic feet		Envirocare

response.epa.gov/starmetcmi

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