

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Friday, January 28, 2005

From: David Dorian

Subject: UF4 and CaF2 DISPOSAL CONTINUES

Starmet, CMI

365 Metal Drive, Hwy 80, Bamwell, SC

POLREP No.:	20	Site #:	A48Q
Reporting Period:	January 3 to 28, 2005	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 #	68-S4-02-06
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

DOE DRUM REMOVAL (FUND-LEAD)

EPA contractor continued the packaging and disposal of UF4 found in 85 gallon overpacks and 55 gallon drums. A complete description of the packaging/shipping process is given in previous Polreps. In this reporting period 1,320 85-gallon overpacks of UF4 were packaged into strong tight containers and sent to the Envirocare Landfill for disposal. To date, EPA has disposed of 4,827 drums (of the estimated 6,300 drums) of DOE UF4.

DEBRIS REMOVAL (FUND-LEAD)

EPA disposed of 2 30-cubic foot rolloffs filled with debris from the clean out of the DU center. The debris was a combination of contaminated wood and DAW.

WASTE CHARACTERIZATION (FUND-LEAD)

EPA performed confirmatory sampling on the approximately 960 drums of DOE UF4 stored in 55-gallon drums. The material was consistent with the previously-disposed UF4.

EPA sampled the characterization of the white powder stored in 11 30-gallon drums and 15 55-gallon overpacks. The material is not radioactive, but final chemical analysis is still pending.

EPA took representative samples of the ducrete wastestream (approximately 240 85 gallon drums). Some of the drums contained paint cans and other debris on top of the debris. All drums will need to be opened to check for aerosol cans.

WASTEWATER TREATMENT (FUND-LEAD)

During this period, EPA disposed of one 20-cubic foot rolloff filled with solidified brine from previous wastewater treatment operations.

REDUCTION BUILDING UF4 DRUM REMOVAL (PRP-LEAD)

USEC contractor continued to transport packaged drums of UF4 to the DCSF for rail transport to Envirocare. During the month, 88 UF4 drums were packaged into lifting bags, 49 damaged UF4 drums were repackaged, and 672 UF4 drums were shipped offsite to DCSF. A total of 576 drums were shipped from DCST to Envirocare. 96 of the drums that were shipped to DCSF were staged in advance of being loaded into a gondola railcar. Six railcars were shipped to Envirocare in January. T

Through the end of the January, 3,532 of the 5,676 total UF4 drums have been packaged into lifting bags. Of those drums packaged, 2,016 have been shipped to the DCSF. Eighteen railcar shipments to Envirocare totaling 1,728 drums have been made as of the end of the month. Additionally, 191 damaged drums of UF4 have been repackaged.

CaF2 DRUM REMOVAL (PRP-LEAD)

USEC contractor continued with CaF2 drum inspection, characterization, staging and lift bag loading in the Reduction Building. In January, 1,108 CaF2 drums were packaged into lifting bags and 14 cargo vans were shipped to Envirocare. Additionally, two full cargo vans were staged and will be shipped soon.

2,052 of the 3,750 (approximate total) CaF2 drums have been packaged into lifting bags. Of those drums packaged, 1,840 have been shipped to the Envirocare in 23 cargo vans.

REDUCTION BUILDING TANK CLEAN OUT (PRP-LEAD)

USEC contractor is installing plumbing and gauges to empty the tanks. Tank V-110B was found to be empty, aside from a residue that will require pressure washing.

ERT AUDIT

EPA ERT conducted a radiation safety audit of both USEC and EPA contractor activities.

Planned Removal Actions

Last spring, EPA inventoried Starmet's on site laboratory in preparation for a lab-pack removal. The inventory includes: solvents, radioactive standards, acids, bases, and salts. EPA will commence the lab-pack operations next month.

EPA and USEC will continue to remove all drums from the site. The next period will include removal of 240 drums of Ducrete. USEC has developed plans to neutralize the hydrofluoric acid, stored in the tank in the Reduction Addition. Work expected to commence soon.

Next Steps

EPA will attend a public meeting at the Red Oak Fire Department on February 3, 2005. The purpose of the meeting is to update the community on the progress to date.

