United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Friday, July 2, 2004
From: David Dorian

Subject: Starmet, CMI
365 Metal Drive, Hwy 80, Barnwell, SC

POLREP No.:	14	**Site #:**	A48Q
Reporting Period:		**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 hexaflouride (UF6) to a more stable material, uranium tetraflouride (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

Seven (12) 30 cubic foot roll offs and 78 B-25 boxes filled with radioactive debris were sent off site for disposal to the Envirocare Landfill in Clive, Utah. Gamma spectroscopy indicated that the material was depleted uranium. The B-25 boxes were painted and sealed with caulk prior to transport. 16,375 cubic feet weighing 335,233 lbs were shipped offsite.

The B-25 boxes were shipped in six shipments (manifests #0008 to #0013) as Low Specific Activity (LSA) waste. The roll-off containers transported crushed drums, debris from the clean out of SeaLand containers, and wood planks used to stack drums of UF4.

USEC and its contractors presently training their crew in anticipation of their removal. USEC has set up an onsite laboratory to process radioactive surveys and staged a Permacon box on the Reduction Building floor to sample drums.

The following tasks were completed on site from June 1 to June 30, 2004:

1. EPA's ERRS contractor painted caulked and reconditioned as necessary the 78 B-25 boxes for disposal. ERRS contractor emptied three SeaLand containers filled with radioactive debris. Some material, remnants of Starmet's metal program, were left aside for further characterization.

2. ERRS contractor treated 1,900 gallons of radioactive wastewater in the facility's on site propane-fed evaporation system. The brine was solidified with polyacrylate. The solidified waste will be sent offsite for disposal.

3. 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.

response.epa.gov/starmetcmi