

Public

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MEMORANDUM FOR: Robert A. Nelson, Acting Section Leader, Low-Level Waste Management Branch, NMSS  
 Timothy C. Johnson, Section Leader, Decommissioning & Regulatory Issues Branch, NMSS

FROM: George M. McCann, Section Chief, Fuel Facilities and Decommissioning Section, Region III

SUBJECT: REGION III MANAGEMENT STRATEGIES: SHIELDALLOY METALLURGICAL INC. (SMC), CAMBRIDGE, OHIO AND NORTHEAST OHIO REGIONAL SEWER DISTRICT (NORS), CLEVELAND, OHIO

I have attached for your information, strategies developed by Region III. These strategies are to be used as management tools for monitoring the remediation progress of the above sites. It is the Region's intent that the strategies will improve coordination and communication of activities between Headquarters and Region III, with an end result being a faster resolution of issues and ultimately removal of these sites from the SDMP.

Should you have any questions regarding the above sites, please do not hesitate to contact Mike Kurth, for NORS at (708) 829-9869; Ray Glinski, for SMC at (708) 829-9813; or me at (708) 829-9856.

Original signed by G. McCann

George M. McCann, Chief  
 Fuel Facilities and Decommissioning  
 Section

Attachments: As stated

cc w/o attachments:  
 W. Axelson  
 G. Shear  
 M. Kurth  
 R. Glinski

150009

RIII

McCann/sd  
 02/08/94

*HMM*  
*yes*  
*plus attachments*

*H005*  
*1/1*

SHIELDALLOY METALLURGICAL CORPORATION (SMC)

Objectives and Strategies

PRESENTED TO DRSS JANUARY 11, 1994

SHIELDALLOY METALLURGICAL CORPORATION (SMC)  
DIVISION OF RADIATION SAFETY AND SAFEGUARDS  
FUEL CYCLE AND DECOMMISSIONING BRANCH

BACKGROUND

SMC assumed license responsibility from a predecessor company, Vanadium Corporation of America - also known as Foote Mineral (SMB-00850) - in 1987. The site is located south of Cambridge, OH on 120 acres, of which only 20 acres have been in active use. The previous licensee had processed large quantities of Ferro-Columbium ore in the manufacture of a Ferro-Columbium alloy. The ore composition was 0.04% uranium and 2% thorium by weight, and the license possession limit was 6900 lbs for these nuclides. During this manufacturing process, which was active from 1957 to 1972, the nuclides were separated from the alloy product and were incorporated into a waste slag. This slag is now stored in two separate piles onsite, designated as the west pile and the east pile. All other areas of the site have been decontaminated. The current production of a ferro-vanadium alloy by SMC does not use starting material that would be considered source material. SMC has another site in Newfield, New Jersey, which also has accumulated a large amount of waste slag.

SMC has recently filed for reorganization of debt under Chapter 11 of the Bankruptcy Code. Negotiation and oversight of the bankruptcy issue is being coordinated by NRC LLWM, LLDR. LLDR also has project management responsibility for review and approval of site surveys, characterization, remediation, and disposal proposals. The Region III office has inspection responsibility and will assist LLDR in the review of proposed survey and remediation plans.

SHIELDALLOY METALLURGICAL CORPORATION (SMC)  
DIVISION OF RADIATION SAFETY AND SAFEGUARDS  
FUEL CYCLE AND DECOMMISSIONING BRANCH

PROPOSED COURSE OF ACTION

DRSS proposes the following course of action by the staff of Low Level Waste Management (LLWM) and the Region III Fuel Cycle and Decommissioning Branch to ensure that SMC Corporate and site management are aware of the significance of the uranium/thorium/radium issues associated with the slag, and that they take timely and effective steps to remediate this waste. The objectives are as follows:

- A. DRSS will communicate with LLWM to ensure that effective and cooperative dialogue is conducted at frequencies sufficient to keep all interested agencies cognizant of current issues and to accomplish prompt and complete review of all plans and issues relating to the SMC sites.
- B. DRSS/FCDB staff will conduct inspections at the Cambridge, OH site at frequencies sufficient to assure that the slag is being adequately maintained. This will include an independent sampling of soil/sediment/surface water samples and split sampling with the licensee in their "Ground Water and Surface Water Monitoring Program for the East and West Piles at Sheildalloy Metallurgical Corporation, Cambridge, OH".
- C. DRSS/FCDB and Region III Public Affairs will support LLWM at public meetings and coordinate public issues and allegations.
- D. DRSS/FCDB will work with LLWM to develop a timeline for the closure of the waste slag issue and termination of the source material license.

## SMC OBJECTIVES AND STRATEGIES

### A. OBJECTIVE

DRSS/FCDB will communicate with LLWM to ensure that effective and cooperative dialogue is conducted at frequencies sufficient keep all interested agencies cognizant of current issues and to accomplish prompt and complete review of plans and issues relating to the SMC sites.

### STRATEGY

1. FCDB will participate in conference calls with LLWM and other interested regulatory agencies on a quarterly basis.
2. FCDB will support LLWM in scheduling and preparing for Regulators' Meetings. Minutes of the meetings will be written, distributed for confirmation, and maintained.
3. FCDB will review all decommissioning documents submitted to FCDB by the established due date.
4. FCDB will support LLWM, ORAU in preparation of decommissioning documents, the Environmental Impact Statement, etc.
5. FCDB Project Manager will contact LLWM Project Manager on a weekly basis to determine current status.

## SMC OBJECTIVES AND STRATEGIES

### B. OBJECTIVE

DRSS/FCDB staff will conduct inspections at the Cambridge, OH site at frequencies sufficient to assure that the slag is being adequately maintained. This will include an independent sampling of soil/sediment/surface water samples and split sampling with the licensee in their "Ground Water and Surface Water Monitoring Program for the East and West Piles at Sheildalloy Metallurgical Corporation, Cambridge, OH".

### STRATEGIES

1. FCDB will continue to conduct inspections that will include the review of licensee's monitoring data, the collection of soil/sediment and water samples to assess possible migration of nuclides into the surrounding wetlands. There will be a minimum of one inspection per year.
2. Participation in site visits to SMC-Cambridge with ORAU, LLWM, EPA, OEPA, and local officials on an as needed basis.
3. Accompany SMC staff during the sampling phase of their monitoring program and take split samples for independent, confirmatory analysis.
4. Review results from licensee's monitoring program and TLD program as they become available and make pertinent comments to SMC regarding the data.

## SMC OBJECTIVES AND STRATEGIES

### C. OBJECTIVE

FCDB/DRSS and Region III Public Affairs will support LLWM at public meetings and coordinate public issues and allegations.

### STRATEGIES

1. FCDB/DRSS, Government Liason, and Public Affairs will continue to participate with LLWM at public meetings regarding SMC.
2. FCDB will investigate an allegation that slag from Foote Mineral was taken by a contractor and used as fill at local residences.

## SMC OBJECTIVES AND STRATEGIES

### D. OBJECTIVE

DRSS/FCDB will work with LLWM to develop a timeline for the closure of the waste slag issue and termination of the source material license.

### STRATEGIES

1. Review of Site Characterization Plan
  - a. Determine the sufficiency of the waste slag sampling and radiological analysis programs.
  - b. Determine sufficiency of offsite contamination program.
2. Review of Site Characterization Report
  - a. Characterize nuclide content of piles.
  - b. Determine applicable BTP option.
  - c. Determine extent of offsite contamination.
  - d. Support LLWM in approval of applicable option.
3. Review of Remediation Plan
  - a. Determine adequacy of plan to prevent dose to public.
  - b. Determine adequacy of plan to meet applicable BTP option.
  - c. Determine sufficiency of plan to remediate any offsite contamination.
  - c. Submit comments to LLWM.
4. Implementation of Remediation Plan
  - a. Conduct inspections at SMC-Cambridge during remediation to assess sufficiency of remediation activities and measures to minimize dose to workers (Parts 19 and 20).
  - b. Take independent measurements of dose rates and take independent samples to assess radionuclide concentrations.
  - c. Review dosimetry records of remediation workers.
  - d. Determine whether the BTP option requirements are met.
5. Review of Close-out Survey Plan
  - a. Determine adequacy of close-out survey plan to quantify any residual contamination and confirm success in meeting BTP option requirements. Submit comments to LLWM.
6. Confirmatory Survey
  - a. In conjunction with LLWM, determine whether Region III FCDB or ORISE should conduct the confirmatory survey.
  - b. If ORISE conducts the survey, review the plan, accompany the ORISE survey team to SMC, review draft survey report, submit comments to LLWM.
7. Termination of License

NORTHEAST OHIO REGIONAL SEWER DISTRICT  
(NORSO)

Objectives and Strategies

Presented to DRSS January 1994

NORTHEAST OHIO REGIONAL SEWER DISTRICT (NORSRD)  
DIVISION OF RADIATION SAFETY AND SAFEGUARDS  
FUEL CYCLE AND DECOMMISSIONING BRANCH

NORSRD BACKGROUND

In April 1991, cobalt-60 contamination was identified at the Northeast Ohio Regional Sewer District (NORSRD) Southerly Wastewater Treatment Plant (Southerly) in Cuyahoga Heights, Ohio. The contamination was incidently discovered as a result of an aerial environmental radiation survey of a nearby facility. It is the result of radioactive releases to the sanitary sewers in the NORSRD service area.

Surveys were performed by Oak Ridge Institute for Science and Education (ORISE) and NRC Region III staff during 1991 and 1992 to determine the extent of cobalt 60 contamination. Disposal dates and dumping locations of treated sewage were obtained from interviews of Southerly plant personnel and examination of records on plant history and operations. Based on this data, Region III staff estimated 404 millicuries of cobalt-60 existed at Southerly in 1992. The first known date for cobalt-60 contamination at Southerly was the end of 1982.

The NORSRD services most of Cuyahoga, and small portions of Lake and Summit counties in the State of Ohio. The plants receive sewage from combination waste/storm lines. The sewage is screened, biologically and chemically treated, and liquids and solids are separated. At Southerly, the ash is converted to a slurry after incineration and piped in a continuous feed operation to three on-site sanitary evaporation ponds, designated ponds "A, B and C." Each pond has a capacity of about 60,000 cubic yards of ash and takes about 2.5 years to fill. When full, the pond is taken off line and partially excavated by contractors, with the excavated ash disposed of on site. The ponds were remediated in the summer of 1993, and the other contaminated ash sites are either fenced and posted as restricted areas or buried under a clean layer of soil cover. All areas where contaminated ash is stored are within the Southerly site.

NORTHEAST OHIO REGIONAL SEWER DISTRICT (NORSRD)  
DIVISION OF RADIATION SAFETY AND SAFEGUARDS  
FUEL CYCLE AND DECOMMISSIONING BRANCH

PROPOSED COURSE OF ACTION

DRSS proposes that staff from the Division of Low Level Waste Management and the region's Fuel Cycle and Decommissioning Branch (FCDB) cooperate, such that, NORSRD takes appropriate action to characterize and remediate the Southerly Waste Treatment Plant (SWTP). Furthermore, the Region proposes that the NRC endorse an arrangement, other than a license, to assure safe storage of the cobalt-60 contaminated ash.

- A. FCDB will work with OGC and LLWD to develop a mechanism other than a license, to address issues related to onsite storage. FCDB will assist LLWD in obtaining NORSRD's input into and acceptance of the arrangement.
- B. FCDB will communicate with LLWD to ensure that effective and cooperative dialogue is conducted at frequencies sufficient to keep all interested agencies cognizant of current issues and to accomplish prompt and complete review of all plans and issues related to the site.
- C. LLWD and the FCDB will review NORSRD's Radiological Survey Plan. LLWD will approve the Plan and the FCDB staff will oversee the onsite survey activities, review the survey data and provide technical input to the LLWD.
- D. FCDB staff will conduct inspections at the SWTP at frequencies sufficient to assure that the contaminated ash is being adequately maintained. This will include independent and confirmatory sampling of ash, soil, water and other potential environmental pathways of merit.

## NORSD STRATEGIES AND OBJECTIVES

### A. OBJECTIVE

FCDB will work with OGC and LLWD to develop a mechanism other than a license, to address issues related to onsite storage. FCDB will assist LLWD in obtaining NORSD's input into and acceptance of the arrangement.

### STRATEGY

1. FCDB will prepare and submit a memo to LLWD proposing a remediation mechanism other than an NRC license.
2. FCDB will assist LLWD in obtaining NORSD's input into and acceptance of the arrangement.
3. When agreement is reached, FCDB will prepare a draft document describing the mechanism which will be used to implement the agreement. The document will address issues such as: location of the contaminated material; limitation of activities involving the material; posting and security; the survey and sampling program; the inspection program; the term of the agreement (i.e. 5 or 10 years); reporting requirements; and a table of organization.
4. LLWD will approve and issue the implementing mechanism.

## NORS D STRATEGIES AND OBJECTIVES

### B. OBJECTIVE

FCDB will communicate with LLWM to ensure that effective and cooperative dialogue is conducted at frequencies sufficient to keep all interested agencies cognizant of current issues and to accomplish prompt and complete review of all plans and issues related to the site.

### STRATEGY

1. FCDB will participate in conference calls with LLWM and other regulatory agencies on a quarterly basis.
2. FCDB will support LLWD in scheduling and preparing meetings between the principle parties. Minutes of the meetings will be distributed.
3. FCDB will review all decommissioning documents by the established due dates.
4. FCDB will support LLWD and ORISE in preparation of decommissioning documents, e.g., environmental impact statement.
5. FCDB project manager will contact LLWD project manager at least monthly.

## NORSR STRATEGIES AND OBJECTIVES

### C. OBJECTIVE

LLWD and the FCDB will review the NORSR Radiological Survey Plan. LLWD will approve the Plan and the FCDB staff will oversee the onsite survey activities, review the survey data and provide technical input to the LLWD.

### STRATEGY

1. FCDB will review the Plan to assure the SWTP is characterized radiologically, their comments to be provided to LLWD.
2. After LLWD approves the Plan, FCDB will perform inspections to audit its implementation.

## NORS D STRATEGIES AND OBJECTIVES

### E. OBJECTIVE

FCDB staff will conduct inspections at the SWTP at frequencies sufficient to assure that the contaminated ash is being adequately maintained. This will include independent sampling of ash, soil and water.

### STRATEGY

1. FCDB will continue to conduct inspections that will include the review of NORS D's monitoring data, the collection of split samples of environmental material (soil, ash, water) and NORS D's adherence to the radiological safety plan.
2. The frequency of inspection will be determined by the progress of onsite activity.

- D. Once the NORSD's final survey is completed, FCDB will support LLWM with the review the proposed NORSD Final Site Remediation Plan. LLWM will grant final approval of the remediation plan. FCDB staff will provide technical input regarding plan review and will conduct onsite oversight during the actual remediation process, as needed.

#### STRATEGIES

1. Review Site Characterization Plan
  - a. Evaluate radiological sampling and analysis programs.
  - b. Evaluate offsite contamination program.
2. Review Site Characterization Report
  - a. Characterize total cobalt-60 inventory.
  - b. Evaluate licensee disposal proposal.
  - c. Determine extent of offsite contamination.
  - d. Support LLWM in approval of disposal option.
3. Review Remediation Plan
  - a. Evaluate plan to prevent dose to public.
  - b. Evaluate plan to regarding its applicability to disposal proposal.
  - c. Evaluate plan's effectiveness to remediate any offsite contamination.
  - c. Submit comments to LLWM.
4. Implementation of Remediation Plan
  - a. Implement mechanism selected by the Commission for the oversight of the material in decay-in-storage.
  - b. Conduct inspections during remediation (decay-in-storage) to assess remediation activities.
  - c. Conduct surveys and collect samples to evaluate storage site and its integrity.
  - d. Review dosimetry records of workers associated with project.
5. Review of Close-out Survey Plan

Evaluate NORSD close-out survey plan. Submit comments to LLWM.
6. Confirmatory Survey
  - a. In conjunction with LLWM, determine whether Region III FCDB or ORISE should conduct the confirmatory survey.
  - b. If ORISE conducts the survey, review the plan and RIII inspectors will audit the ORISE survey team. RIII will also review draft survey report and submit their comments to LLWM.