

- fossil energy
- environmental
- energy efficiency
- other

SCRAP METAL DECONTAMINATION/CONVERSION

States Impacted:

Tennessee and South
Carolina

Benefit Areas:

Cost Savings, Cost
Avoidance, Reuse of Scrap
Metals, Recycling

Participants:

Manufacturing Sciences
Corporation, BNFL, Inc., Oak
Ridge National Laboratory,
Savannah River Site

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Description

The decontamination and decommissioning of Department of Energy (DOE) facilities generate vast quantities of radioactively contaminated scrap metal (RSM) from process equipment, utilities, and structures. DOE is estimated to possess about 1 million tons of radioactively contaminated metals. Nickel makes up about 19 percent of the total expected scrap volume, but may carry more than 84 percent of the total value, based upon current scrap prices. The contamination cannot be completely removed by surface decontamination methods. Under a fixed-price contract worth \$238 million, BNFL, Inc., with its subsidiary company Manufacturing Sciences Corporation (MSC), will use its patented electrorefining technology to decontaminate 6,000 tons of nickel. The grit blasting technology will be used for surface decontamination of other metals.

Goals

The electrorefining process cost-effectively produces decontaminated nickel, thus reducing the volume of scrap metal that must be disposed of and permitting the reuse of a valuable metal. Decontamination and reuse also avoid the environmental hazards associated with scrap storage or burial.

Tangible Benefits

National: The electrorefining technology can be used to decontaminate RSM nickel (estimated at 40,000 tons) at DOE sites across the U.S. The valuable metal can then be reused rather than disposed of as waste. This is recycling at its best — reducing the volume of a finite resource that must be mined to meet industry demand. The technology will help DOE save on or avoid disposal costs, thus helping reduce the DOE mortgage for cleaning up contaminated sites.

Regional: Three huge buildings at the East Tennessee Technology Park (ETTP) Site (formerly K-25 Site) in Oak Ridge, TN, will be decontaminated, helping to prepare the Oak Ridge installation for private use. The technology will allow the local community to benefit through the accelerated return of previously unproductive federal property to productive use in the local economy.