

# Waste Processing Capabilities

WM13 Symposium

February 2013

## **Core Services**

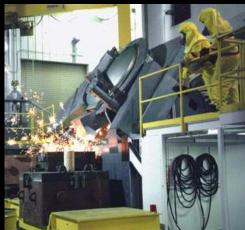


- Combined Processing and Disposal for Low-Level and Mixed Low-Level Wastes
- Unique Recycling Capabilities
  - Metal melt recycling
  - Depleted Uranium
  - Lead
- High Activity Waste Processing
  - Filter Shredding
  - SempraSafe Resins
  - NNSS Certification
- Unique Transportation Casks





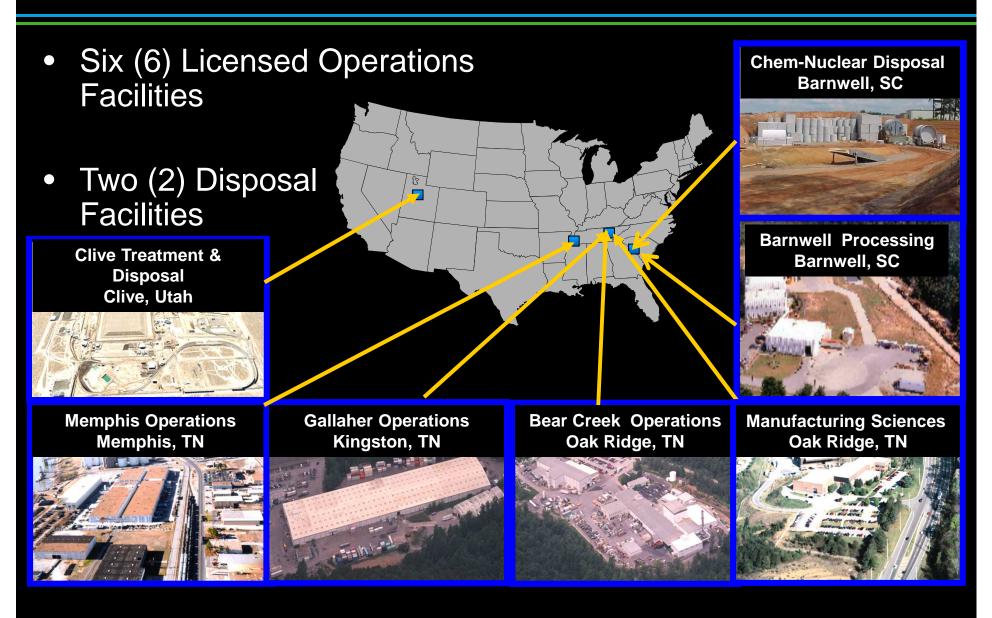






## **Facilities**





# Bear Creek Processing Facility







- Incineration
  - Solids, Liquids, Oils, Sources, and Sludges
- Compaction
- Metal Melt Furnace
  - Produce 20K Pound Shield Blocks
- Lead Casting/Recycle
- Commercial Certification
- NNSS MLLW Certification
- Mixed Waste Treatment Permit





Incineration

## Bear Creek - Incineration



- Two Units each with a capacity of 1600 lbs/hour
- Processing: DAW, Solids, Oils, Sludges, Animal Carcasses and Liquids
- Incineration of low-activity sources
- Process and Return of Ash Campaigns, if requested
- Average Volume Reduction >100:1



# Bear Creek - Compaction



- Largest LLW Compactor in U.S.
- Energy Solutions' Compactor delivers a force of 10 million pounds
- Since 1986, the Compactor has processed over 125 million pounds of LLRW
- Average Compaction for DAW of 6:1
- High Activity Waste Volume Reduction





## Bear Creek - Metal Melt





Capacity: >10M lbs per year

 Products (Beneficial Reuse: All products back to nuclear industry)

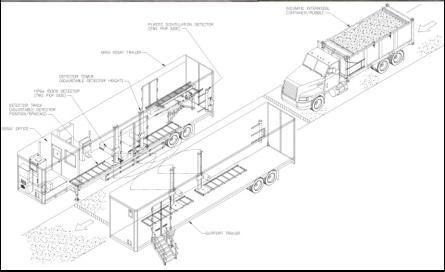
 Carbon, Stainless, Aluminum, Copper, Brass, and Bronze

### Bear Creek - Bulk Survey for Release



- Volumetric Assay of Low Activity Wastes
  - DAW
  - Resin
  - Sludge
  - Concrete
  - Soil
- Accepted Geometries of Drums to Intermodals





# Transfer Station Operations



- Low Activity DAW and Metals "Commercially Certified" for Clive disposal replacing Incineration and Compaction
- Customer Benefit:
  - Speed of processing/disposition (less than 45 day average to disposal)
  - Energy Solutions waste profiles and GSAP permits used
  - Rail delivery
  - 100% visual and radiological inspection





# Lead Casting/Recycling



- Outlet for contaminated lead recycling
- Products for sale to the nuclear industry:
  - DOT Type A Packages
  - Process Shields for Liners
  - Specialty Shields for Accelerators



### Bear Creek – MLLW Treatment



- Treatment Technologies Include:
  - Macroencapsulation
  - Waste Sorting and Segregation
  - Size Reduction
  - Amalgamation
  - Chemical Reduction
  - Deactivation
  - Neutralization
  - Stabilization/Solidification
  - Recovery of Organics
  - Carbon Adsorption
  - Chemical Oxidation
  - Precipitation
- Services Combined with NNSS Certification



#### **Bear Creek -Instrumentation Service**



- -Calibration/Repair of Customer Owned Equipment
- -Rental of Energy Solutions Provided Equipment













Our site can be directly acc

http://shopping.netsuite.com/instrumentation or via the company home page (via Customer Portal/Instrumentation at <a href="http://shopping.netsuite.com/instrumentation">www.energysolutions.com</a>).

# Clive Treatment and Disposal Facility







Clive Treatment & Disposal Clive, Utah

- Class A LLW Disposal
- MLLW Treatment
  - Macroencapsulation
  - Stabilization
  - Vacuum Thermal Desorption
  - Liquid Stabilization
- MLLW Class A Disposal



## **Barnwell Processing Facility**



- 17-acre facility that consists of two primary buildings
  - 101 7,500 ft<sup>2</sup>
  - $-201-20,000 \text{ ft}^2$
- Services provided
  - High Activity Filter Shredding
  - Volume reduction
  - Dewatering
  - Compaction
  - Decontamination
  - Water processing



 The BPF shares a common boundary from the west with the Department of Energy Savannah River Site

## Barnwell Processing - Filter Shredding





#### SEMPRASAFE



 Energy Solutions and Studsvik combined expertise to form a joint venture called SEMPRASAFE



- SEMPRASAFE combines EnergySolutions' capabilities for disposal and waste-management logistics with Studsvik's world-class waste processing capabilities to address disposal of high activity spent ion-exchange resins
- Utah DRC granted EnergySolutions approval to dispose of up to 40,000 ft<sup>3</sup> per year of processed resins
- In 2012, SEMPRASAFE received over 10,000 ft<sup>3</sup> of resins for processing
- SEMPRASAFE continuing to grow in 2013

#### Manufacturing Sciences Corp. – DU Recycling



- Accepts Metallic DU for recycling
- Fabrication of Casks, Boxes, Shields & Assemblies
- MSC is currently processing specialty metals for:
  - Aerospace
  - Wireless telecommunications
  - Metals manufacturing
  - Nuclear applications







# **Energy Solutions**

Providing safe solutions for the processing and disposition of low-level radioactive material