



ENERGY*SOLUTIONS*

Energy*Solutions* Processing Capabilities

WM2015



STATE OF TENNESSEE
DEPARTMENT OF LABOR and WORKFORCE DEVELOPMENT

220 French Landing Drive, 3rd Floor
Nashville, Tennessee 37243-1002
(800) 325-9901

Bill Haslam
Governor

Burns Phillips
Commissioner

January 23, 2105

Mr. Greg Lawson
General Manager
Energy Solutions
1560 Bear Creek Road
Oak Ridge, Tennessee 37830

Dear Mr. Lawson:

I would like to express my appreciation to you and your staff members who took time out of their schedules on Thursday, January 22nd to discuss recent efforts at your facility in the area of safety and health. The day was both educational and enjoyable. You and your team did an outstanding job summarizing your team's recent efforts.

VPP sites have traditionally been evaluated on a three year schedule. The VPP Policies and Procedures Manual allows for Tennessee OSHA to extend the second evaluation of an existing Volunteer STAR facility from three to five years. In order to maintain the high standards that have come to be associated with the Volunteer STAR, Tennessee OSHA has taken the approach that these extensions will be granted on a case by case basis and only where there is sufficient evidence that the site has embraced the concept of continuous improvement.

A review of the Energy Solutions-Oak Ridge self-evaluations, on-going communication with site personnel, and the information presented at your facility on January 22nd, all indicate that the drive to continuously improve your world class safety and health program is most definitely alive and well.

Accordingly, it is appropriate that Energy Solutions located at 1506 Bear Creek Road in Oak Ridge, TN be granted a 2-year extension on the sites current Volunteer STAR certification. I anticipate conducting the next Energy Solutions-Oak Ridge on-site evaluation in the first quarter of 2017.

On behalf of all of Tennessee OSHA let me once again express my appreciation for all of the outstanding efforts being conducted at this facility to ensure a safe and healthy workplace for the Energy Solutions-Oak Ridge employees.

Sincerely,

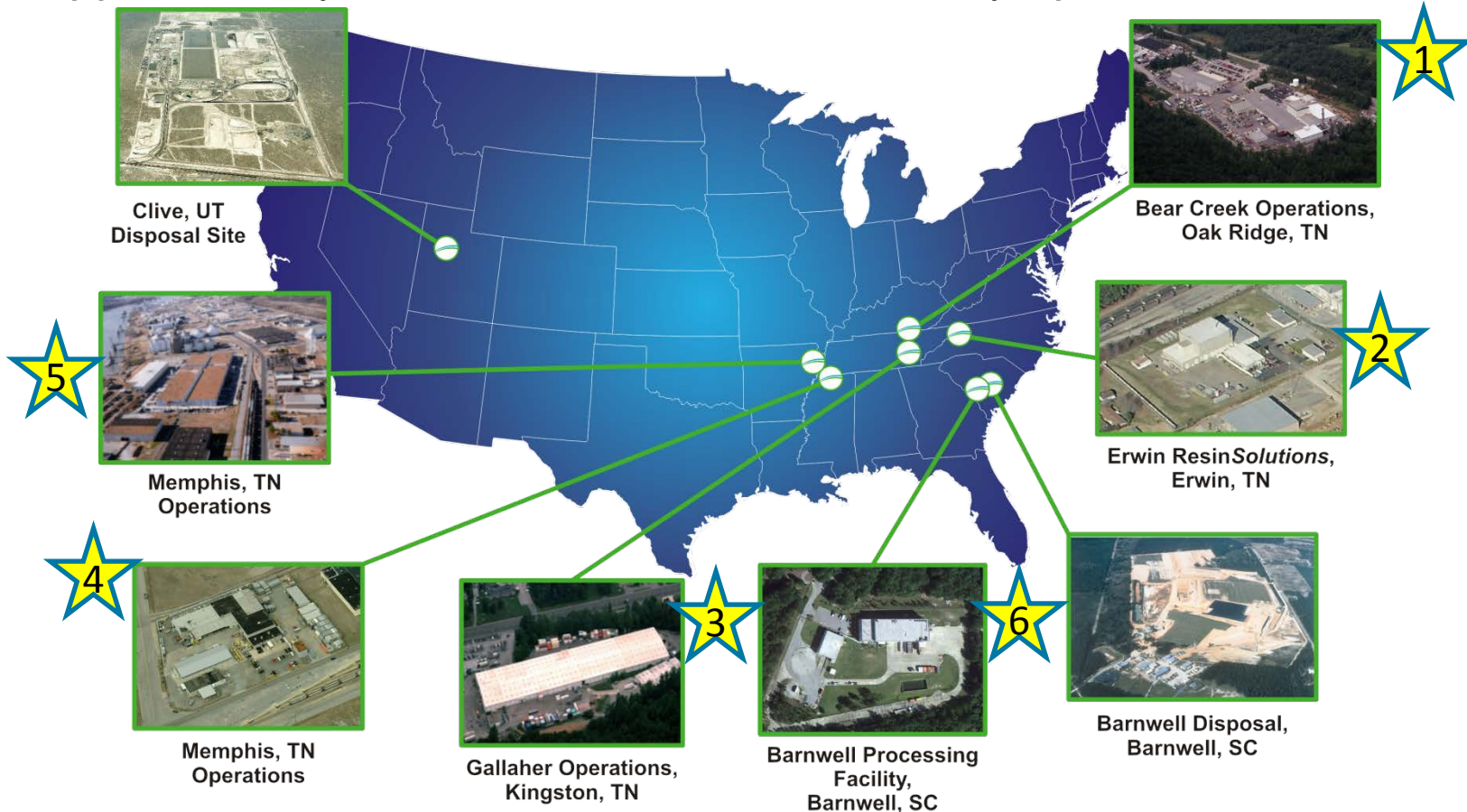
David Blessman
VPP Manager
Tennessee OSHA



- Bear Creek Operations continues under TN Voluntary Protection Program (VPP) status
- “A review of the Energy Solutions-Oak Ridge self-evaluations, on-going communication with site personnel, and the information presented at your facility on January 22nd, all indicate that **the drive to continuously improve your world class safety and health program is most definitely alive and well.**”
- “Accordingly, **it is appropriate that Energy Solutions located at 1506 Bear Creek Road in Oak Ridge, TN be granted a 2-year extension on the sites current Volunteer STAR certification.** I anticipate conducting the next Energy Solutions-Oak Ridge on-site evaluation in the first quarter of 2017.”

US-Based Facilities

- Eight (8) licensed operations facilities
 - ★ Six (6) processing facilities
 - Two (2) disposal facilities
- Approximately 2 centuries of combined facility operations



Bear Creek Facility Oak Ridge, TN

- Incineration
 - 2 commercial low-level radioactive units
 - Solids, liquids, oils and sludges
- Compaction
- Metal melt furnace
- Lead casting/recycle
- Commercial certification
- Mixed waste treatment permit



Bear Creek Operations,
Oak Ridge, TN



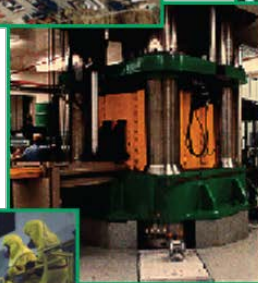
Incineration



Metal Melt



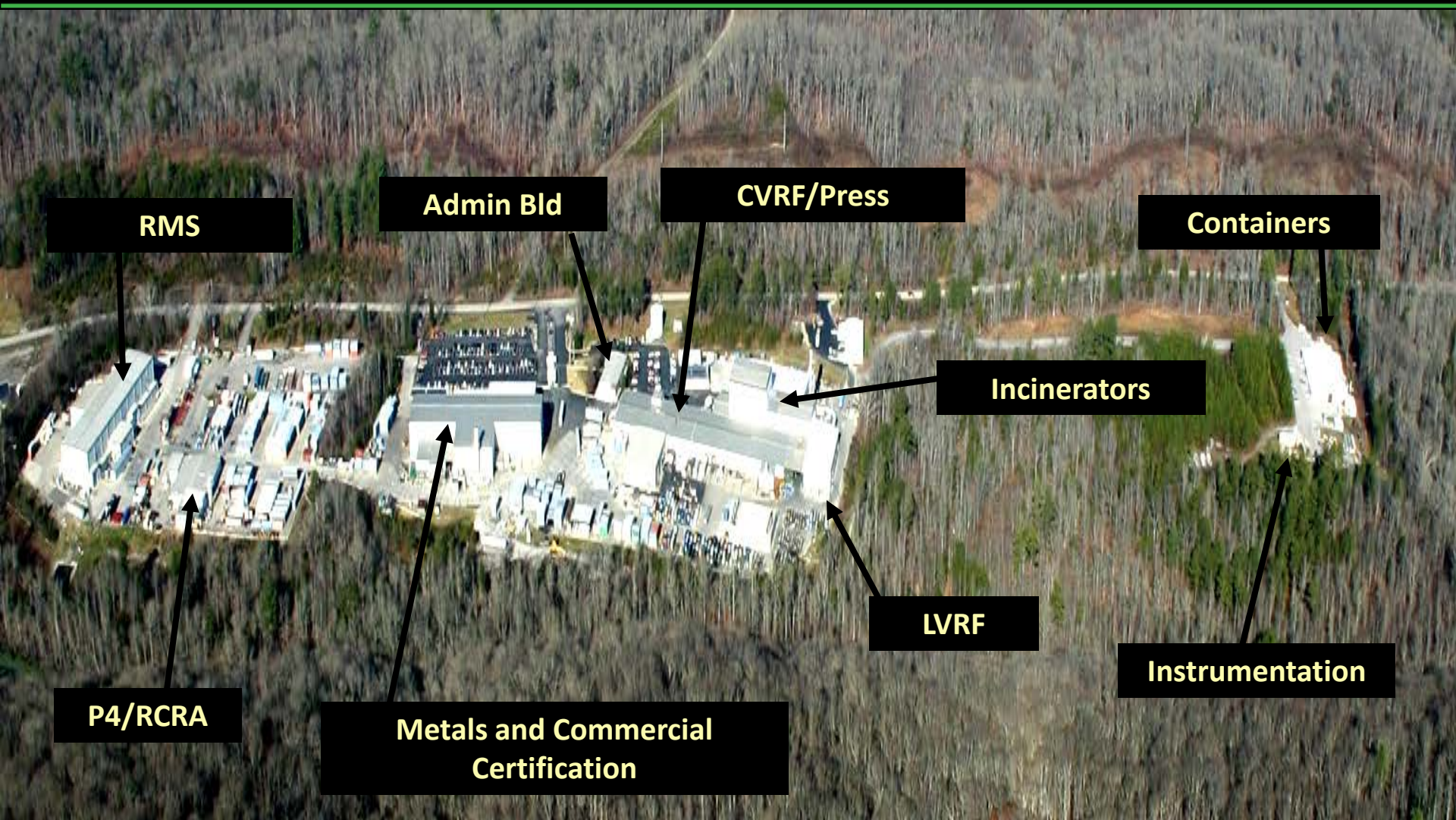
Compaction



TN-OSHA VPP SITE since 2008



Bear Creek Central Facility Layout (170,000 ft² or 15,800 m² under roof)



Over 13,000 te per annum of Processed Radioactive Material

Overview of Processing Capabilities

– Bulk Waste Assay Program

- Green is Clean (GIC non detect)
- Safecheck aka “Bulk Survey for Release” (BSFR)

– Dry Active Waste (DAW) ; primarily Commercial Certification

- Compaction
- Incineration
- High Rad Trash

– Metals; primarily Commercial Certification

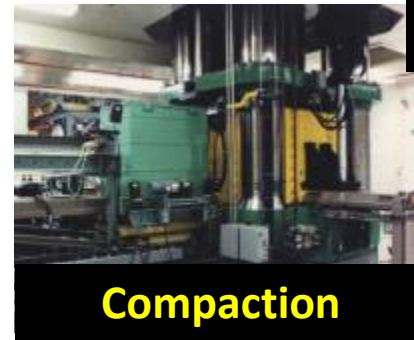
- Decontamination
- Recycle including metal melt
- Baling/Cut & Sizing

– Specialty Waste

- Water, oil, liquids and sludges
- Biological wastes
- Source encapsulation, etc.
- Large Components
- Lead & Lead Encased Metals
- Resin (Low & High Activity)
- Filters (Low & High Activity)



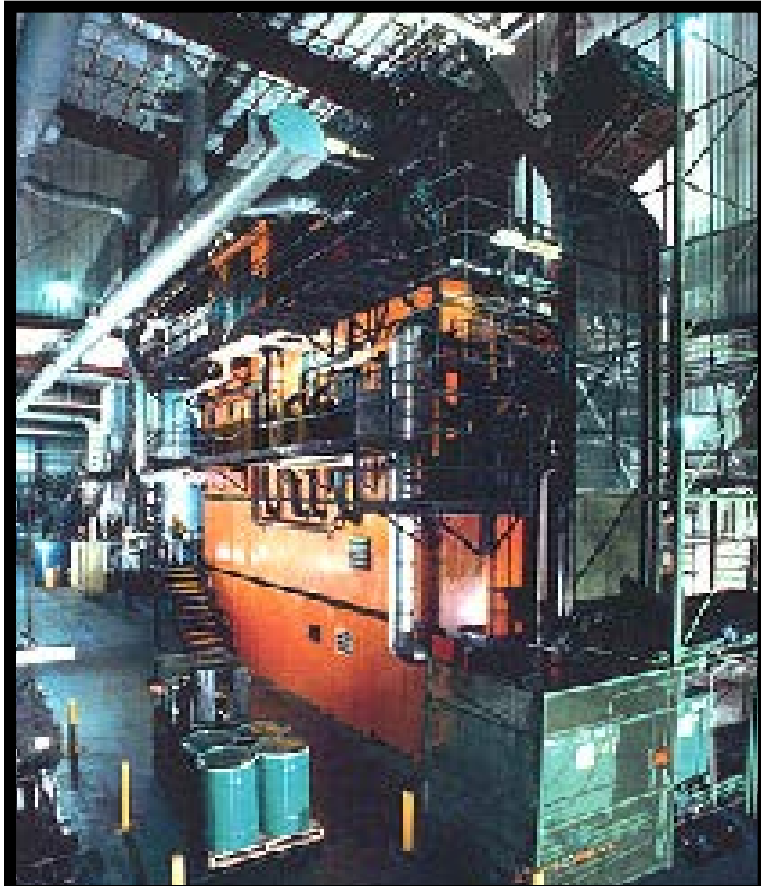
Incineration



Compaction



BSFR at Gallaher Road Operations

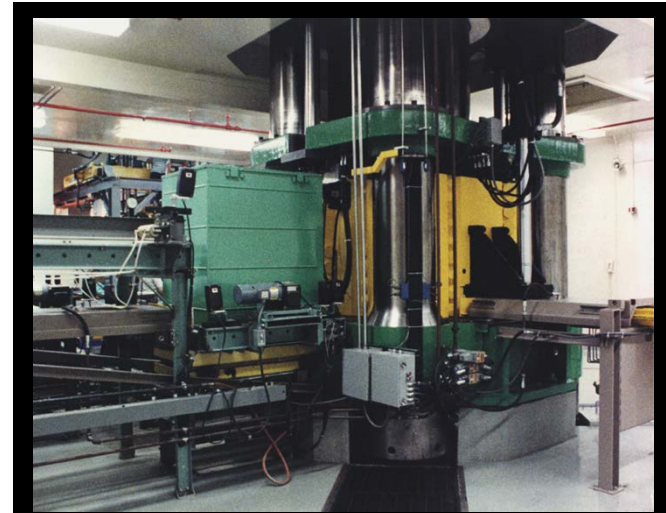


Incineration

- Only 2 commercially available in U.S.
 - Unit A constructed in 1989
 - Unit B constructed in 1995
- Incineration of rad waste solids, liquids, oils, & sludges

Supercompaction

- Largest compactor in U.S. constructed in 1985
- Compacts drums and boxes



Compaction



Compacted Pucks



Metal Melt

- Metal melt furnace – joule-heated metal induction furnace for recycling
- Constructed in 1991
- Produces shield blocks for high energy physics labs



Shield Blocks

- Lead recycling into various types of shield containers and devices
- Products for sale to the nuclear industry:
 - Type A Packages
 - Process Shields for Liners
 - Specialty Shields for Accelerators
 - Transfer Bells



LS3 Shield



Security Barrier



**Overpack
Drum Shields**



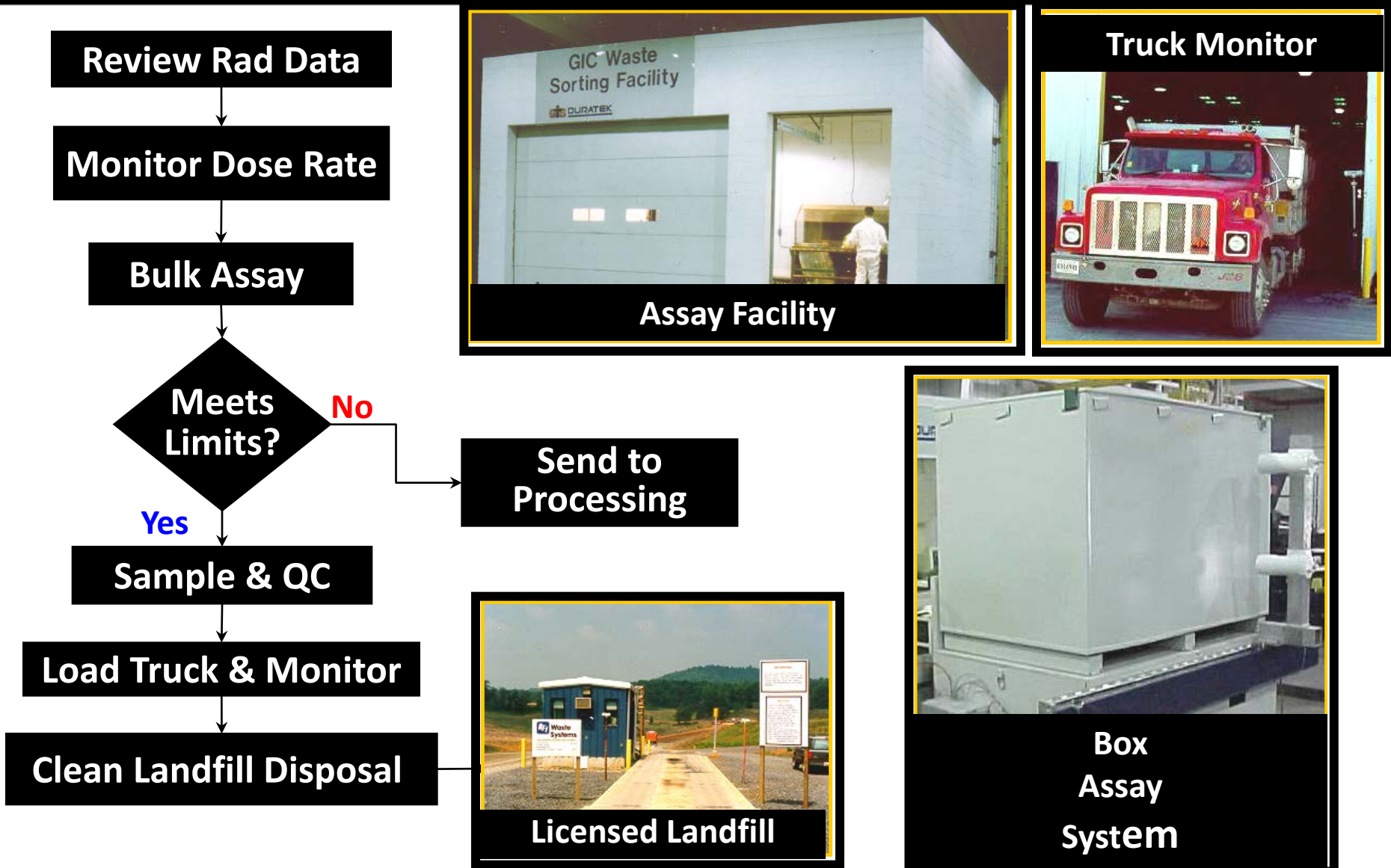
- Advanced characterization, interim storage and staging for enhanced industry optimization of high activity wastes.
 - Storage license for up to 5-years
- The waste streams include the following:
 - Solidified and Reformed Process Residues
 - Resin and water processing media
 - Mechanical Filtration
 - Sludge or sludge like waste forms
 - DAW and Metals
 - Sealed Sources and Standards



Gallaher Road Facility Layout

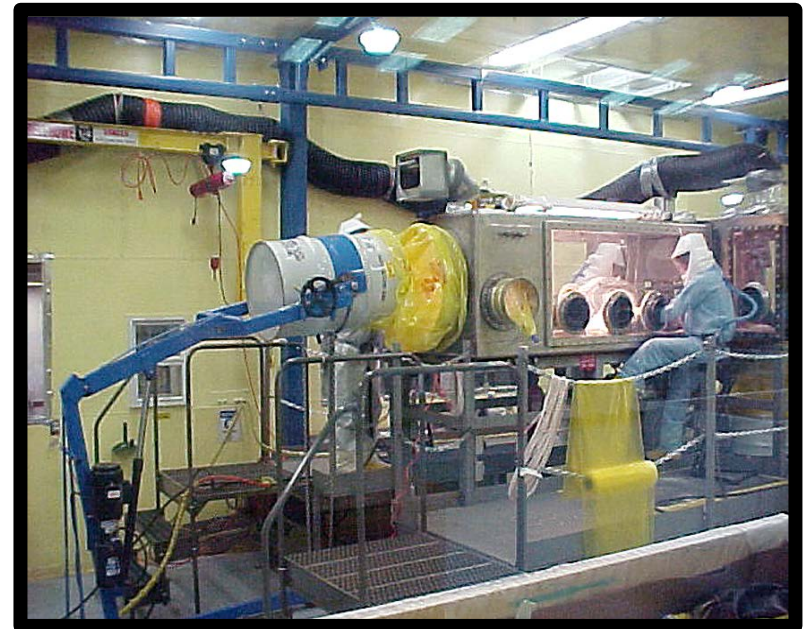


Bulk Waste Assay Program (BWAP) a.k.a. Bulk Survey for Release (BSFR)



Specialty Services Operations

- Nevada National Security Site (NNSS) Waste Certification Program
- High Rad CW Water/Sludge Drying
- Repackaging Services



- Product Lines:
 - Calibration/Repair of Customer Owned Equipment
 - Rental of EnergySolutions Provided Equipment
- Our site can be directly accessed at <http://shopping.netsuite.com/instrumentation> or via the company home page (via Customer Portal/Instrumentation at www.energysolutions.com).



Memphis Operations

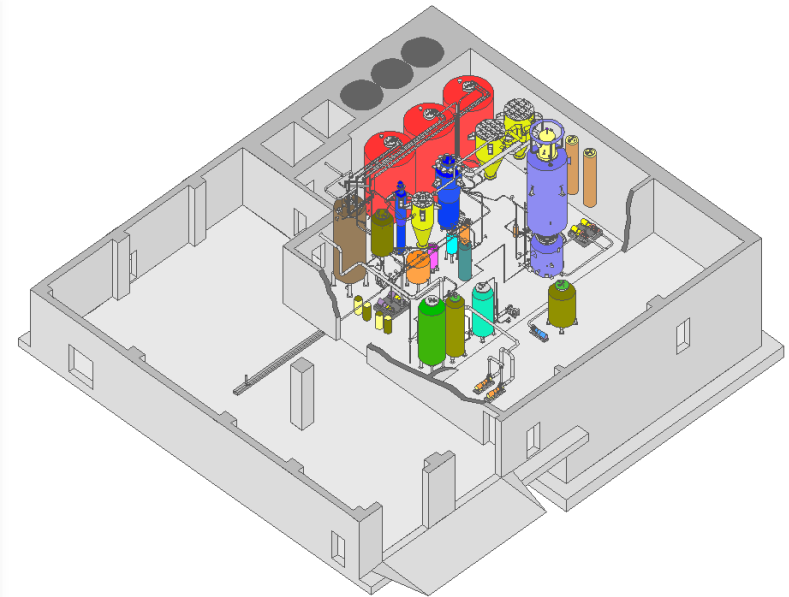
Memphis, TN

- Barge, Rail, Road Access
- “Safeshop” Customer Hotshop Rental
- Rad Equipment Storage
- Outage Equipment Service Center
- EnergySolutions Project Service Center
 - Equipment Decontamination
 - Container Decontamination
 - Tank Segmentation
 - Large Component Staging

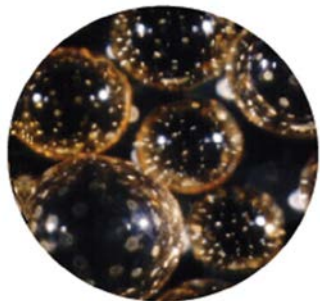


Erwin ResinSolutions (Erwin, TN)

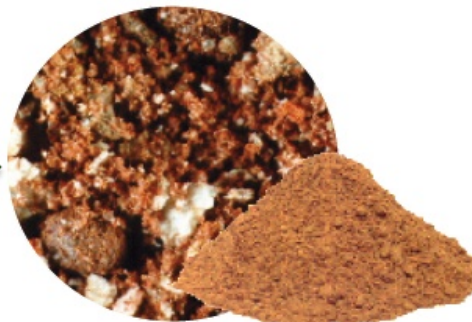
- ~1000 Rem/hr (10 Sv/hr) Shielding Basis
- 15 Years of Proven Reliability (*operation since 1999*)
- Patented Thermal Technology (THOR[®])



Erwin Incoming / Outgoing Shipments



Organic Resin



Reform Residue (RR)



- Processing Capabilities
 - High Activity Filter Processing
 - Resin Dewatering
 - Sort/Segregate/Compact
 - Decontamination
 - Large Component Work
- ~500 Rem/hr (5 Sv/hr) Shielding Basis
 - Utilizing Remote Technology for Filter Handling
 - Robotic Arm:
 - Reach: up to 17 ft
 - Arm Finger Span: up to 10 in
 - Shred up to 1/4 inch
 - 20,000 ft² (1858 m²) climate controlled concrete facility
 - 80-Ton Overhead Bridge Crane
 - Incoming/Outgoing Container Size:
 - - up to a 14-195 / 14-210 / 14-215
 - Accessible by Rail and Highway



- A Global Nuclear Solutions Company
- Strong in Both Commercial, Government & Int' l Markets
- Fully Integrated Across the Nuclear Fuel Cycle
- Reputation for Innovation, Quality, Safety & Performance
- A Trusted Strategic Alliance Partner



Demonstrated, Safe and Proven Operations Partner



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