

## Prioritizing And Waste Management At Advanced Mixed Waste Treatment Project

Mike Auble Waste Processing Strategy Manager Idaho Treatment Group Advanced Mixed Waste Treatment Project Waste Management Symposium 2014 March 5, 2014



# Idaho Treatment Group

## **AMWTP Experience**



- Multiple types and sizes of containers; boxes, bins, drums
- Severely degraded containers
- Prohibited items; pressurized cylinders; liquids; sealed internal containers; excessive decay heat; excessive fissile content; excessive plutonium equivalent curie content
- Pyrophorics
- PCBs
- RH components





### **AMWTP Facts**

- ITG contract term: Oct. 1, 2011 through Sept. 30, 2015
- Employee Count: 620 (Plant, 557; Town, 63), operating 24 X 7 X 365
- ITG employees have safely worked nearly 3 million hours without lost time injury; more than 15.4 million hours since Dec. 2003
- AMWTP has shipped more than 52,200 cubic meters of legacy TRU and MLLW since May 1, 2005



- 1 = Retrieval
- 3 = Storage
- 5 = Payload & Shipping

- 2 = Characterization
- 4 = Treatment

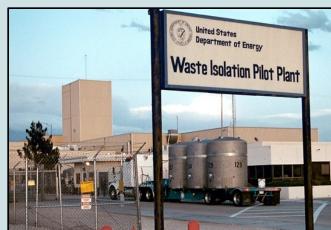




## Solid Performance In FY13

- July 2013 ITG's Integrated Safety Management System validated
- Working with DOE Idaho Operations and Carlsbad Field Office, and New Mexico and Idaho regulators received approval to use supercompaction as treatment for prohibited items and eliminated WIPP requirement for sampling analysis of waste
- Seven consecutive successful WIPP recertification audits and eight successful Nevada National Security Site evaluation
- Increased production by 36
   percent over FY12, exceeding
   baseline and shipping 4,482 cubic
   meters of transuranic and MLLW
   waste out of Idaho





Top, box retrieval work inside AMWTP Retrieval Containment Enclosure. Below, another AMWTP shipment arrives at WIPP.



## Idaho Treatment Group **AMWTP Waste Treatment Process**

Offsite Waste



Onsite Storage/ Retrieval



**AK Review** 



#### Characterization

- Assay
- Radiography
- Head gas sampling



#### **Treatment**

- Supercompaction
- Liquids treatment
- Sizing
- Macro





- MLLW waste





Disposal **Options** 







Commercial **TSD** 

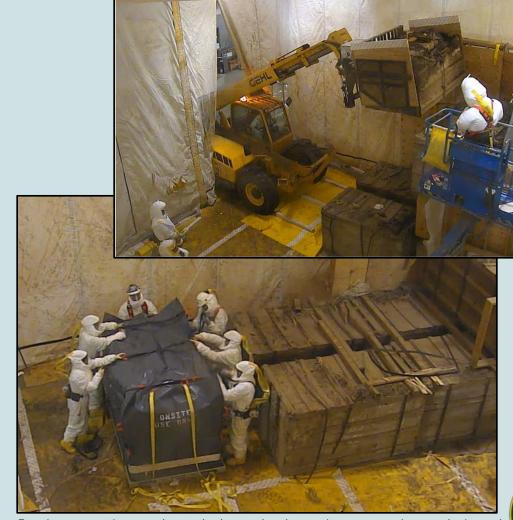


**Federal** Sites



# Idaho Treatment Group New Improvement Initiatives

- ITG introduced
   Operational Excellence
   Program where workforce
   driven improvements are implemented
- New soft-sided box design proves safe, economical alternative to traditional metal cakebox
- Implemented major performance modifications allowing supercompaction of liquids and aerosol cans, and eliminated unnecessary waste sampling



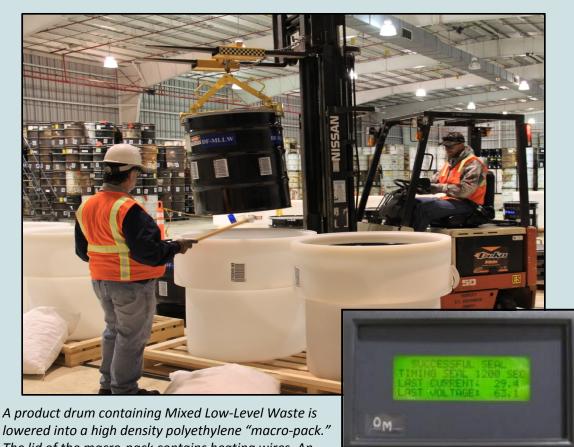
Employees retrieve a degraded wooden box using an employee-designed Box Retrieval Forklift Carriage (BRFC). Below, employees wrap degraded box with new soft-sided overpack used for deteriorating wooden boxes.





## Macroencapsulation

- New on-site LDR treatment (macroencapsulation) program started operations August 1, 2012
- HDPE liner (macro-pack) loaded with certified product drum
- Capability of treating up to eight drums per hour
- Treated 2,282 product drums, 875 cubic meters, through January 2014 with no rejects



A product drum containing Mixed Low-Level Waste is lowered into a high density polyethylene "macro-pack." The lid of the macro-pack contains heating wires. An electric current is sent through the wires to permanently seal the container.



# Idaho Treatment Group Fulfilling DOE's Mission

 DOE's primary shipper to WIPP; an essential asset for processing transuranic contacthandled waste: Mixed low-level waste from AMWTP permanently disposed at Nevada National Security Site and the Clive, UT site

572 Hanford 5,830 **Idaho National** Laboratory 18 2,045 **Rocky Flats** Environmental Technology Site Los Alamos 1,337 National Oak Ridge National Laboratory Energy Technology Lovelace Respiratory Savannah 1.648 Waste Isolation **Pilot Plant** Transuranic waste shipments from DOE sites to WIPP as of Jan. 27, 2014. Total number of shipments to WIPP is 11,867.



# Idaho Treatment Group

## **AMWTP: A National Asset**

"AMWTP...The distinguishing feature of the AMWTP is its unique capability to process hazardous material. As this facility is a national asset, it could potentially be used inside the **DOE** Complex as a strategic



First shipment of transuranic waste from Los Alamos National Laboratory arrives at AMWTP on Nov. 18, 2013

resource — for example, to sort, characterize, and repackage similar mixed waste at other DOE sites — once the INL site cleanup effort is completed."

Idaho Leadership In Nuclear Energy Commission
Final Report

