Small Percentage of Waste Received at ERDF Requires Macroencapsulation

- **98%** Waste not requiring treatment
- **2%** Waste requiring treatment
- **20%** Macroencapsulation
- **80%** Out of cell soil treatment
- **40%** Large or Complex
- **30%** Bulk Hazardous Debris
- **30%** Containerized
Small Percentage of Waste Received at ERDF Requires Macroencapsulation

3,000 cubic yards of hazardous debris from the 324 Building alone will be disposed at ERDF. The 324 Building is a cat-2 nuclear facility that poses extensive and hazardous disposal challenges.
ERDF’s Unique Combination of Characteristics

Distance to Surface and Groundwater

Hanford On-Site Waste Only

Arid Environment

- ~7” annual precipitation
- 25-year/24-hour design storm = 1.28” rainfall

Large Size and Scale of Operations

Disciplined Process to Disposal

RL Oversight
Contractor Procedures
Rad Controls
CONOPS

DOE Disciplined Operations

ERDF as of 4/2013 (12M cubic yard capacity); With future expansion?

Oak Ridge 18% of ERDF capacity (2.2M cubic yards)
ICDF 4% of ERDF capacity (0.51M cubic yards)
In-Trench Treatment Advantages

*Reduced potential for contaminant migration*

- **Double liner system**
- **Increased distance to facility boundary - less possibility of contaminant migration into environment or outside boundary**

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**Super Cell Liner**

- **In-Trench Treatment**
  - Length of time with in-trench treatment: **Less than one week**
  - Length of time with out-of-trench treatment: **Months and weather-dependent**

**Out-of-Trench Treatment**

- Offload into a staging area outside of the trench
- Protect from elements
- Relocate to treatment area
- Spray primer
- Spray first coat of foam
- Spray second coat of foam
- Spray third coat of foam
- Reposition debris to complete process
- Complete foaming
- Complete coating
- Load finished debris
- Transport finished debris to trench
- Offload finished debris into trench
Additional Treatment Steps Multiply Risks to Workers and the Environment

**Industrial Risks**
- Increased crane use
- 1 lift/load for in-trench vs. 5 lifts/load for out-of-trench

**Chemical Risks**
- Added chemical exposure pathway
- Additional respiratory protection needed
- Exposure time while spraying chemicals increased

**Radiological Risks**
- Longer staging time increases worker exposure
- Close proximity to contaminated waste
Simplified Operations

- In trench treatment uses one method (grout) for all waste forms
- Waste is never moved post-treatment – preserves integrity of macro
- Waste handling is at absolute minimum – one time
- Room to spread out
  - Not confined to small operations areas
  - Workers not in proximity of waste
  - More ALARA
- Less expensive – More $$ available for cleanup

Summary

*In trench treatment is more protective of people and the environment, as well as less expensive.*