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Oak Ridge LLC

*Safely Delivering DOE's Vision for the
East Tennessee Technology Park Mission*

Waste Management Challenges at the East Tennessee Technology Park

EFCOG

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Challenges

- Dioxin & Furan Waste

- Problem:

- LLW includes both solid phase and liquid phase dioxin/furan F and U hazardous waste codes
 - Treatment technology exists to treat the primary waste, however the secondary liquids have no treatment/disposal path

- Solution:

- Able to re-characterize and remove Dioxin & Furan codes which opened path for 29 of 60 to DSSI for incineration.
 - Treatability study under way for remaining 31 containers



Challenges (cont.)

- Sodium and Lithium Shields

- Problem:

- Large, odd-shaped items containing bulk sodium metal or lithium hydride
 - Extremely reactive resulting in two Type B investigations occurring within the DOE complex as a result of uncontrolled reactions

- Solution:

- Working with several vendors to determine safe cost effective disposition path

- Status:

- Permafix is treating 22 of the small shields that fit into their treatment unit. Searching paths for remaining shields



Challenges (cont.)

- **Obtaining approval for new on-site disposal cell (EMDF)**
 - Informal dispute heading to formal dispute
 - Site selection and site characterization
 - Groundwater concerns and discharge criteria
- **Mercury Bearing Waste**
 - Mainly soil and/or debris contaminated with mercury at NNSA Site Y-12
 - Sensitivity with Stakeholders for LDR compliant mercury waste to be disposed of on-site



Challenges (cont.)

- Separation of elemental mercury from soil/debris
 - Amalgamation for radioactive elemental mercury and RMERC for non-radioactive elemental mercury
 - RMERC or macro for debris under alternative treatment standard for debris
 - RMERC or stabilization for soil under alternative treatment standard for soil
- Controlling the release of mercury during deactivation and demolition
- IH challenges
 - Vapors



Challenges (cont.)

- **High Activity Waste Generated at ORNL**
 - No hot-cell and/or facility capability for handling/characterization
 - Difficult to make DOT compliant for shipment to potential TSDRF
 - Shutdown of M&EC South Bay and ultimately TWPC eliminates the paths that has been used for this type of waste historically at Oak Ridge



Complex Wide Challenges

- Sodium shields and other sodium bearing waste can be found at other DOE sites
- Eventual loss of M&EC South Bay will impact complex with processing high activity waste
- Due to lack of waste destined for several specific treatment technologies, TSDRF's are considering eliminating for business reasons
 - Could result in no treatment technology available and orphan waste being generated.

