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East Tennessee Technology Park Mission*

# The Disposition of Former “No Path To Disposal” Wastes

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March 5, 2014

# Agenda

- Initial “No Path To Disposal” (NPTD) Waste Inventory
- Regulatory Framework
- Contractual Requirements
- Disposition Approach
- Current Status
- Remaining Challenges

# NPTD Waste Inventory

Waste Category	Quantity		Reason for "No Path" Designation
	Volume (m <sup>3</sup> )	# Containers	
Classified F027 Mixed LLW Debris	5.8	11	F027 Listing, Classified
Classified PCB LLW Debris	9.4	4	PCBs, Classified
Reactive Mixed LLW Returns	0.8	4	Reactivity Characteristic
Classified Mixed LLW Liquids/Debris/Soils	18.3	27	Classified MLLW
Mercury Mixed LLW Debris Returns	15.2	34	Mercury, Organics
Dioxin/Furan Mixed LLW Liquids and Debris	15.8	61	Underlying Hazardous Constituents (UHCs)

# Regulatory Framework

- Two compliance agreements allowed continued storage of NPTD waste
  - Site Treatment Plan
  - PCB Federal Facility Compliance Agreement
- The agreements provide regulatory relief until disposal pathways can be identified
- The agreements include provisions requiring continuous progress



# Contractual Requirements

- The East Tennessee Technology Park (ETTP) contract included:
  - Management and continued storage of the NPTD waste
  - Developing disposal paths of the NPTD waste
- The ETTP contract did not include:
  - Disposition of the NPTD waste

# Disposition Approach

- Revisit historical waste characterization Information; thoroughly understand the waste
  - Process knowledge – circumstances and processes of generation and subsequent storage and handling
  - Available characterization data
  - Current condition of waste and waste container
- Review the regulatory framework – what's allowed and what's not allowed
- Revisit current available treatment technologies and disposal options
- Fill data gaps
- Reclassify and re-characterize

# Disposition Approach (cont'd.)

- F027 Debris

- Problem:

- MLLW Identified as EPA Hazardous Waste F027 (discarded unused formulations containing tri-, tetra-, or pentachlorophenol ...)
    - Disposal capability did not exist for classified F027 waste

- Solution:

- Revisited existing process knowledge coupled with interviews of actual waste generator
    - Concluded that the original waste determination was overly conservative

- Result:

- Revised process knowledge documentation, gained generator and Environmental Compliance concurrence, and revised waste determination
    - Waste no longer met the definition of F027 and was disposed as LLW

# Disposition Approach (cont'd.)

- **Classified PCBs**

- Problem:

- Treatment capability not available for radioactive classified PCB waste

- Solution:

- Revisited existing process knowledge regarding specific plant use location
    - Revisited the regulatory framework that resulted in original characterization
    - Utilizing the PCB “Mega Rule”, reclassified the waste as remediation waste and bulk product waste, eliminating the need for treatment

- Result:

- Disposal at the Nevada National Security Site (NNSS)



# Disposition Approach (cont'd.)

- Reactive MLLW Returns

- Problem:

- LLW containing potassium, lithium, cesium, sodium and rubidium that was originally sent offsite for treatment, however, due to the radiological and reactivity hazard, the treatment facility was unable to complete treatment
    - No treatment capability available in the past for radioactive water-reactive metals

- Solution:

- Prepared Request for Proposal and released for bid
    - Allowed the marketplace to work for us
    - Competition motivated the development of treatment capability

- Result:

- Treatment source has been identified
    - DOE provided scope and funding authorization
    - Commercial treatment followed by disposal as LLW

# Disposition Approach (cont'd.)

- **Classified MLLW**

- Problem:

- MLLW that does not meet the LDR treatment standards but also remained classified under the DOE classification scheme
    - No treatment capability available for classified MLLW
    - Commercial disposal facility could not accept classified waste

- Solution:

- Revisited existing process knowledge with emphasis on specific sub-populations within the larger population
    - Reclassified into two sub-populations for which treatment capability was available (macroencapsulation for debris and stabilization for soil)

- Result:

- Waste has been profiled
    - DOE has provided scope and funding authorization
    - Disposition planning is in process

# Disposition Approach (cont'd.)

- Mercury and Organic Contaminated Waste
  - Problem:
    - LLW containing mercury, organics and PCBs
    - Treatment technology available, however could not meet Underlying Hazardous Constituent concentrations as well
  - Solution:
    - Prepared Request for Proposal and released for bid
    - Allowed the marketplace to work for us
    - Competition motivated the development of treatment capability
  - Result:
    - Treatment source has been identified
    - Awaiting scope and funding authorization
    - Disposition planning is in process

# Current Status

Waste Category	Reason for "No Path" Designation	Path Identified	Disposition Complete?
Classified F027 Mixed LLW Debris	F027 Listing, Classified	NNSS	<input checked="" type="checkbox"/>
Classified PCB LLW Debris	PCBs, Classified	NNSS	<input checked="" type="checkbox"/>
Reactive Mixed LLW Returns	Reactivity Characteristic	M&EC, NNSS	<input checked="" type="checkbox"/>
Classified Mixed LLW Liquids/Debris/Soils	Classified MLLW	M&EC, NNSS	In process
Mercury Mixed LLW Debris Returns	Mercury, Organics	EnergySolutions	In process
Dioxin/Furan Mixed LLW Liquids and Debris	UHCs	Unknown	<input type="checkbox"/>



# Remaining 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:

- Storage – for now

