The Transuranic Waste Processing Center (TWPC) is Key to Disposition of Oak Ridge’s Legacy TRU Waste Inventory
Significant Progress Made in Processing TRU Waste, but a Significant Amount Remains to be Disposed at WIPP

- Contact Handled (CH) waste inventory: ~1,579 m$^3$
- CH Waste processing and disposal status (as of December 2015):
  - 94% processed
  - 66% shipped to permanent disposal
- CH Waste inventory remaining to be processed includes difficult waste streams
  - High fissile, pyrophoric, potential energetic chemical wastes
Remote Handled (RH) waste inventory: ~ 671 m3

RH Waste processing and disposal status (as of December 2015):
- 76% processed
- 25% shipped to permanent disposal

Remaining inventory includes some difficult waste streams
- High dose neutron casks
At the Time of the WIPP Events, TWPC was Poised to Resume Shipments After a 3 Year Suspension

- In Spring 2011, the WIPP team suspended characterization activities in Oak Ridge due to funding constraints
- Oak Ridge took over field characterization operations in Fiscal Years 2011-2013 to support continued waste processing
  - Focused on repackaging and staging TRU Waste for future certification and shipment
  - Dispositioned low level waste fallout from TRU processing
- TWPC accumulated a back-log for certification of approximately 3,000 CH TRU Waste drums
WIPP Events Created the Need for Extended TRU Waste Storage

- TWPC was reaching physical storage capacity in FY 14 prior to WIPP events
- Suspended high dose RH Waste cask processing due to limited storage capacity
- The WIPP team returned to the TWPC in 1st quarter FY 14 as planned and began characterization and certification activities
- Continued processing and certification to make progress against regulatory commitments was dependent on extended waste storage
TRU Waste Storage Solution Provides Effective Project Alternative

- Focused on low dose cask processing until new RH storage over-packs were available
- Utilized existing legacy waste storage areas at ORNL to supplement TWPC storage capability
- Deployed critical RH storage capacity through design and manufacture of specialty storage overpacks
- Negotiated revisions to the regulatory milestones and targets
- Continued waste processing to meet regulatory milestones
  - Maximized utilization of trained workforce
- Continued field deployment of the WIPP team to allow for waste certification
Unique Storage Over-Pack
Deployment Supports RH Processing

• Utilize storage capacity at ORNL for RH canisters and deploy RH canister over-packs

• Design considerations
  – Protective features
  – ALARA/Dose management
  – Operability

• Implemented Safety Basis controls and completed readiness activities for ROP operations on 6/15/15

• Approximately 250 total RH waste canisters will be generated
Extended RH Waste Storage Solution Integrated with ORNL Legacy Storage

- RH TRU Waste Extended Storage Solution
- TWPC 30 Ton Crane Bay
- RH Transfer Corridor
- UCOR Storage

TWPC/ORNl Waste Management Facilities Aerial View
Extended TRU Waste Storage Enables Continued Progress During WIPP Shipment Suspension

- **TWPC CH TRU Storage**
  - Drum Capacity – 6,300
  - Actual Drums - 4,871 (77%)
- **TWPC RH TRU Storage**
  - Capacity Canisters - 14
  - Actual Canisters – 4 (29%)
  - Capacity Overpacks – 4
  - Actual Overpacks – 0
- **ORNL Legacy CH TRU Storage**
  - Capacity not constrained
  - 1,347 drums returned from TWPC
- **ORNL Legacy RH TRU Storage**
  - Capacity Overpacks – 250
  - Actual Overpacks – 13 (5%)
Effective TRU Waste Storage Solution
Results in Continued Certification

• TWPC has continued to provide feedstock to the certification program
• The WIPP team has effectively certified Oak Ridge TRU waste to meet regulatory commitments
  – 3,085 CH drums have been certified and returned to storage
  – 1,784 CH additional drums have completed field characterization and will be certified
  – Regulatory milestones completed ahead of schedule

Radiological Characterization
Summary

• The Oak Ridge response actions to the WIPP events identified effective solutions for safe extended storage of TRU waste resulting in:
  • Continued progress in safely processing and certifying the Oak Ridge TRU Waste Inventory while meeting current Regulatory Milestones on or ahead of schedule
  • Utilization of a highly trained workforce (TWPC and WIPP), eliminating significant re-start efforts and associated costs
  • A backlog of safe compliant ready to ship waste when WIPP operations resume
  • Efficiency in future shipment and placement of TRU waste at WIPP