



WIPP Suspension Impacts at Oak Ridge

Waste Management Symposia

March 2015

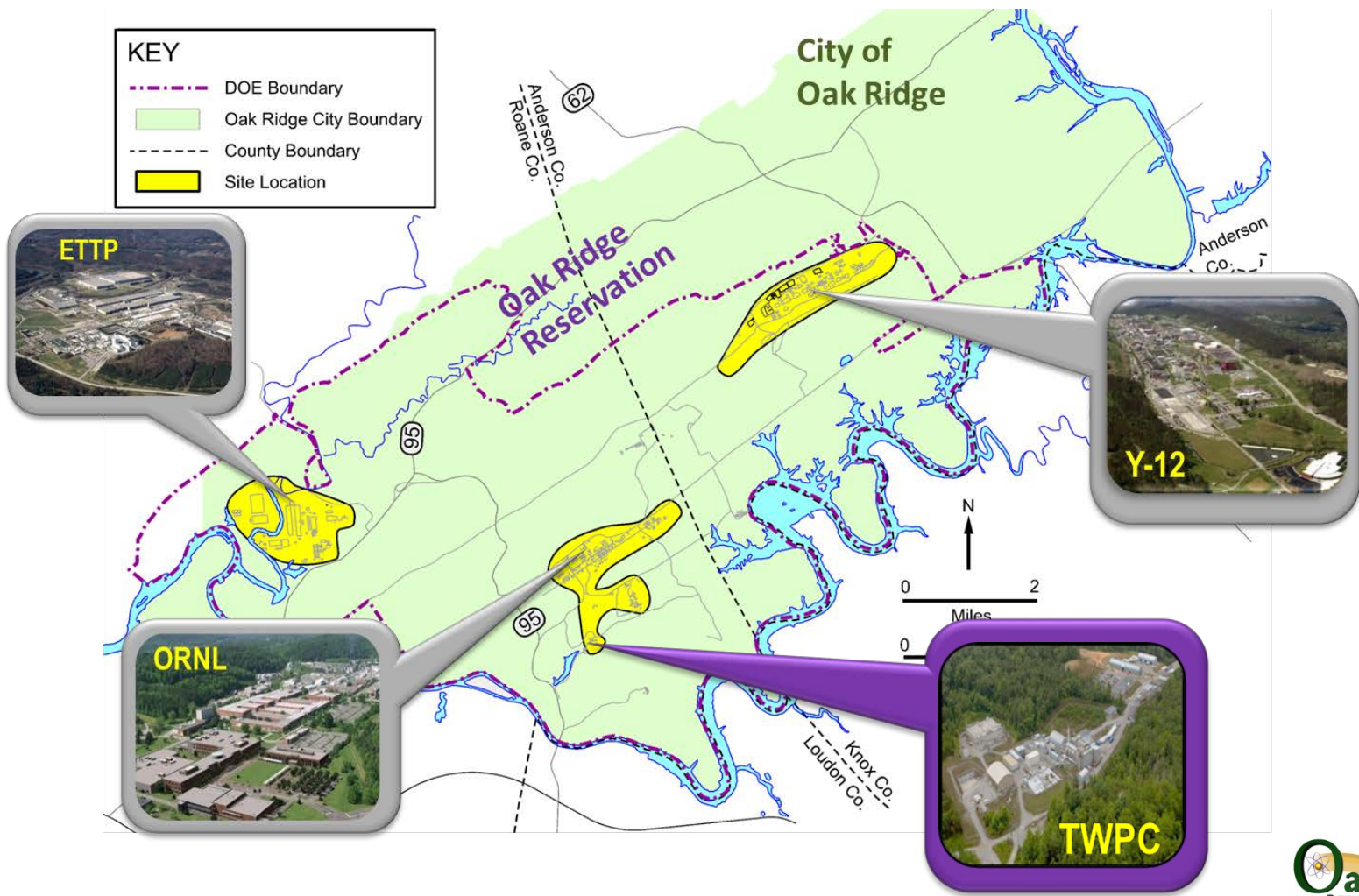
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Oak Ridge Reservation Sites





TRU Debris and Soils Waste Inventory

- Oak Ridge's original TRU waste inventory is comprised of the following:
 - Contact Handled (CH) Debris and Soils ~1,500 m³
 - Remote Handled (RH) Debris and Soils ~560 m³





Mission Accomplishments – CH Waste

- Original CH waste inventory ~1,500 m³
- CH waste processing and disposal status (as of February 2015):
 - 98% processed
 - 69% shipped to permanent disposal
- CH waste inventory remaining to be processed includes difficult waste streams (high fissile, pyrophoric, energetic chemical wastes)





Mission Accomplishments – RH Waste

- Original RH inventory ~560 m³
- RH waste processing and disposal status (as of February 2015):
 - 83% processed
 - 26% shipped to permanent disposal
- Remaining inventory includes some difficult waste streams (e.g., high dose neutron casks)





TWPC Mission Focus FY11-FY13

- **Between 2011 and 2013 TWPC focused on repackaging, characterization, and staging of TRU waste for future Central Characterization Program (CCP) certification and shipment, and certification and disposal of non-TRU waste (LLW/MLLW fall-out)**
 - Optimized segregation and disposal of LLW/MLLW
 - Most of the lifecycle LLW/MLLW disposed of
 - RH processing limited to RH casks expected to yield CH waste
- **CCP certification and shipment was scheduled to resume in early CY 2014**
- **Approximately 3,000 CH waste drums awaiting certification and shipment when CCP returned**



Operational Impacts at Oak Ridge

as a result of February 2014 WIPP Events

- **Requires extended storage of ready-to-ship inventory**
 - TWPC is nearing its physical storage capacity for CH waste and has already reached storage capacity limits for RH waste
 - Material at risk (MAR) management challenges
 - Drove evaluation of alternative waste storage options to continue waste processing operations at TWPC

- **Forced change in RH waste processing strategy**
 - Processing of high dose RH waste casks was stopped due to the lack of RH storage capacity



Oak Ridge Response Actions

- **Maximize continued progress and utilize existing resources to process and certify wastes**
- **CH Waste Storage Solution**
 - Utilize ORNL legacy TRU drum storage facilities in combination with TWPC storage areas
- **RH Waste Storage Solution**
 - Utilize ORNL legacy TRU cask storage facilities for canisters
 - Requires newly designed Steel/Concrete overpacks
 - Utilize poly-shielded 72B canisters for high neutron dose waste
 - Continue evaluation of shielded drum overpacks for hybrid option
 - Flexible strategy responsive to WIPP start-up limitations for RH shipping
 - Currently cost prohibitive/presents operational challenges



Oak Ridge Response Actions

Extended CH Waste Storage

- **ORNL legacy TRU waste storage facilities and TWPC have sufficient capacity to store all remaining Oak Ridge CH TRU waste**
- **CH waste storage projections during suspension**
 - TWPC ~5,000 drums at operating capacity
 - ORNL legacy facilities ~2,050 drums
 - TWPC has returned ~767 (of ~950 planned) certified drums to ORNL legacy TRU waste storage facilities
 - ~1,100 NFS soil drums already in storage will be certified and returned to storage



ORNL legacy TRU waste storage



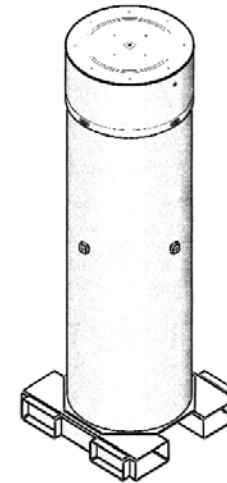
Transfers to ORNL legacy TRU waste storage



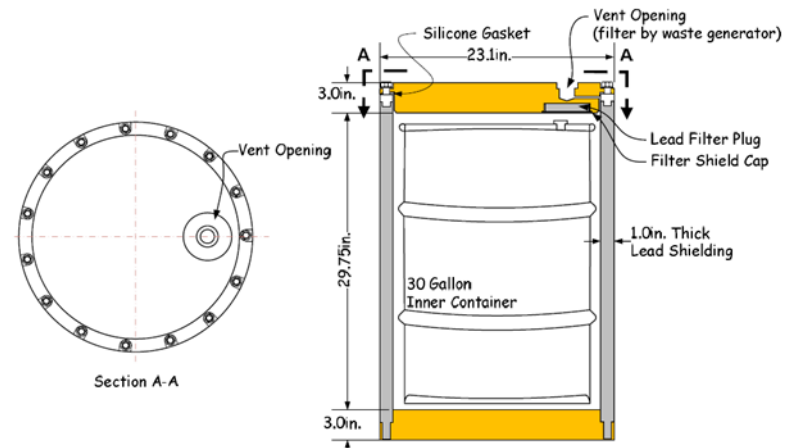
Oak Ridge Response Actions

Extended RH Waste Storage

- ORNL legacy TRU waste storage facilities have sufficient capacity to store all remaining Oak Ridge RH TRU waste
- RH canister overpacks will be procured on a “just-in-time” basis
- Approximately 247 total RH waste canisters will be generated



Preliminary
Design - Single
Concrete 72B
Canister Storage



Shielded Drum



Response Actions for Oak Ridge

Process Actions

➤ Re-sequence Hot Cell cask processing

- Delay high dose cask processing until RH storage capacity is deployed
- Utilize Hot Cell to process low dose casks in conjunction with the Cask Processing Enclosure (CPE)
- Finish CPE processing early



➤ Regulatory Impacts

- The Oak Ridge Site Treatment Plan (STP) establishes enforceable milestones and targets for TRU waste
- STP milestones are structured on completion of TRU waste “waste processing” and “certification”
- WIPP suspension required renegotiation of STP milestones
- TDEC has conditionally approved the revised milestones pending public comment

➤ Lifecycle Cost Growth

- Deployment of new RH storage capability
- Extended storage need for CH and RH TRU Waste
- Schedule extension for TRU waste inventory processing and disposition



Summary

- **Oak Ridge has made good progress in processing and dispositioning the TRU waste inventory**
- **Our response to the WIPP suspension is to continue processing of TRU waste to enable progress under the Site Treatment Plan and to optimize readiness for continuous shipments when WIPP operations resume**
- **Our plan utilizes available facilities for extended storage, and deploys a new RH storage capability**
- **The Oak Ridge approach results in**
 - least impact to STP milestones
 - optimal utilization of trained/qualified workforce
 - optimal life cycle cost control
 - a sound position for renegotiation of the STP milestones