U.S. Department of Energy's Oak Ridge Environmental Management Program

Moving to the Future by Cleaning up the Past

Sue Cange

Acting Manager

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Oak Ridge

Moving to the Future by Cleaning up the Past

Oak Ridge Cleanup Work is Urgent and Essential

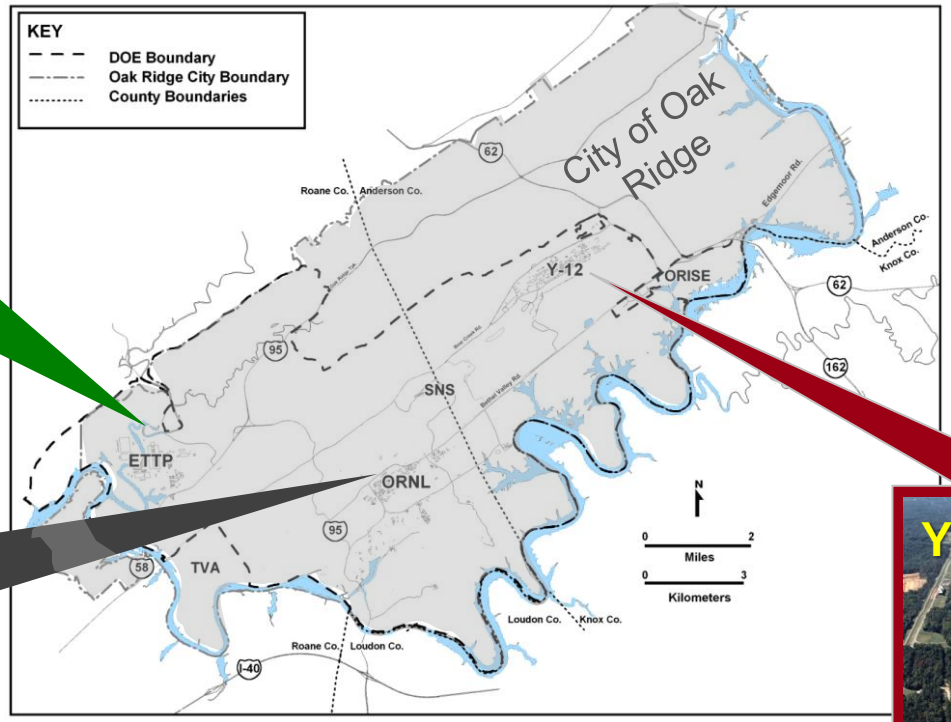
- **Our Mission:** Complete the cleanup of the Oak Ridge Reservation to protect the region's health and environment; make clean land available for future use; and ensure DOE's ongoing vital missions

- **Our Vision:** The Oak Ridge Reservation will be remediated, modernized and reindustrialized

Oak Ridge has a Unique Challenge for Cleanup

Oak Ridge is not an isolated or arid site

- More than 700,000 citizens reside or work within a 30-mile radius of the Oak Ridge Reservation
- High levels of rainfall coupled with shallow groundwater carry contaminants to local waterways



Significant Progress has Been Made

2006: Haul Road opens

2006: Building K-29 at ETTP demolished

2006: All 7,000 UF_6 cylinders removed from ETTP

2008: Building K-25 West Wing demo begins

2008: First shipment of TRU waste leaves Oak Ridge

2009: Initiated cleanup of ORNL & Y-12 under Recovery Act

2009: TSCA Incinerator closed

2010: Building K-25 West Wing demolished

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2011: New cleanup contract awarded

2011: Building K-33 at ETTP demolished

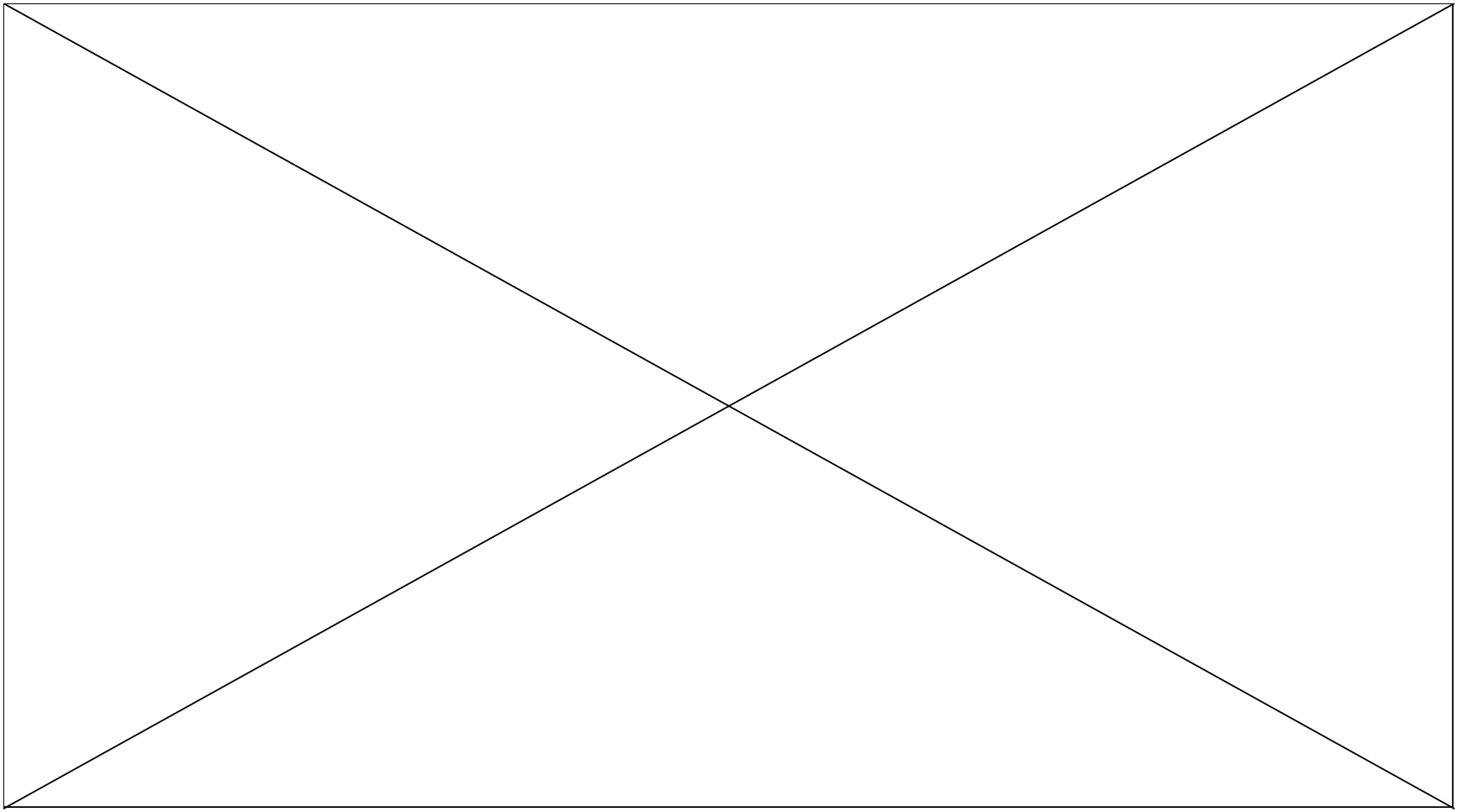
2011: Began Building K-25 East Wing demolition

2011: Began U-233 Direct Disposition campaign

2012: Expansion of onsite disposal facility complete

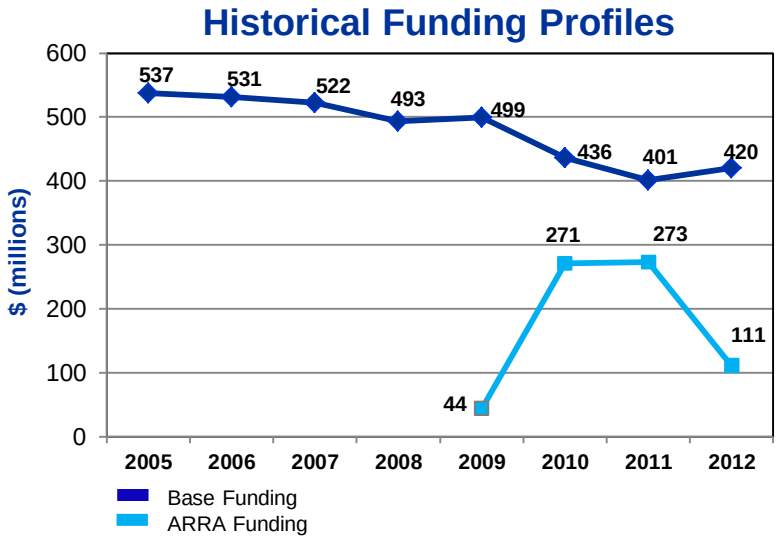
2012: Tank W-1A at ORNL removed

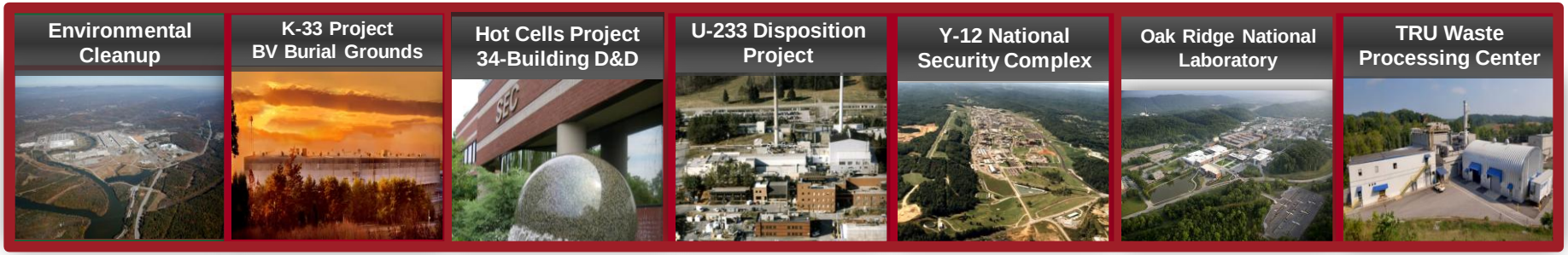
K-25 D&D: Moving Forward



Program Challenges

- Diverse, complex projects
- Declining budgets
- Little relief on regulatory commitments
- Numerous contractors
- Ongoing DOE missions and billions in investment





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Key Program Considerations

- **Y-12 National Security Complex**
  - Environmental Risk
    - Nearly 20 million pounds of mercury was used at Y-12 and of that approximately 2 million pounds are unaccounted for. Of this, roughly 700,000 lbs is believed to have been released into the environment

- **Oak Ridge National Laboratory**
  - Nuclear Radiological Risk
    - Over 26 million curies are currently stored at ORNL along side billions of dollars of Science investment

- **East Tennessee Technology Park**
  - Lifecycle Cost Risk
    - Roughly ½ of the EM-OR budget is spent on minimum safe/essential services, and nearly 40% of that is spent at ETTP
    - As ETTP facilities continue to degrade, the cost for D&D continues to increase
      - Cost to D&D the K-25 Building has tripled, mostly due to deteriorating conditions of the building

K-1070-B Burial Ground Excavation

Positioning for the Future

- **Balancing competing risks**
  - Environmental: Y-12
  - Nuclear/radiological: ORNL
  - Lifecycle cost: ETTP
- **Optimizing progress and efficiencies**
  - Maintaining our outstanding safety record
  - Utilizing our efficient and experienced workforce
- **Looking for innovative ways to perform work**
  - Challenge our approaches
  - Improve use of technology
- **Identifying near-term goals while continuing our longer-term strategic focus**

Transportation Innovation

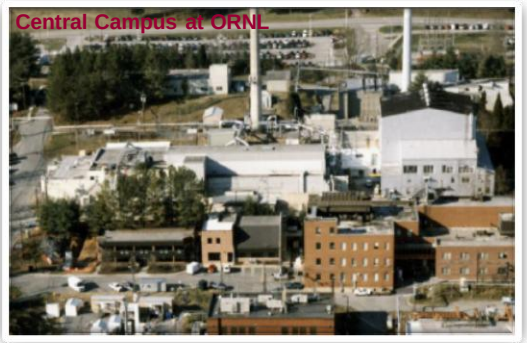
- Development of the Radio Frequency Identification System (RFITS)
  - Developed by a team of Federal and contractor personnel in Oak Ridge
  - Needed due to challenges the K-25 D&D Project was facing with productivity, schedule and cost
  - The system is now used across the Oak Ridge Reservation at all three sites (ETTP, ORNL, Y-12)
- As the system evolved, several "green benefits" became apparent (paperless, improved scheduling, reduced "carbon footprint")
  - Received the 2011 **"Federal Electronics Gold Level Award"** from the Environmental Protection Agency

Oak Ridge has Five Near-term Goals

- Complete demolition of Buildings K-25 and K-27 at ETTP
- Continue to identify ways to address mercury releases at the Y-12 site with a combination of actions including reducing mercury flux and preparing for demolition of facilities
- Remove half of the U-233 inventory at ORNL and make final decisions on remaining nuclear materials
- Continue processing transuranic waste (debris) and prepare for sludge processing
- Reduce risk posed by nuclear materials from ORNL Central Campus by removing excess materials and addressing sources of groundwater contamination


K-25 at ETTP


Alpha 5 at Y-12


Central Campus at ORNL

Longer-Term Strategic Focus

- **East Tennessee Technology Park**
  - Complete demolition of the highest risk facilities -- Buildings K-25 and K-27
  - Address remaining facilities after work is underway at the Y-12 National Security Site and the Oak Ridge National Laboratory
- **Y-12 National Security Complex**
  - Complete Recovery Act projects and finalize overall site cleanup strategy/plan
  - Initiate preparatory activities such as treatability studies and characterization work as soon as feasible
  - Initiate building pre-demolition activities as soon as ETTP high risk facilities are demolished
- **Oak Ridge National Laboratory**
  - Complete Recovery Act projects
  - Complete U-233 disposition and Transuranic waste processing
  - Initiate cleanup of remaining facilities after work is underway at Y-12


K-25 at ETTP


Bank Stabilization at Y-12

Tank W1A at ORNL

Building the Future by Cleaning Up the Past

- **East Tennessee Technology Park**
  - A Brownfield industrial park that will be a vital asset for the region's economic growth
- **Y-12 National Security Complex**
  - A smaller and less expensive footprint to protect the nation's nuclear assets
- **Oak Ridge National Laboratory**
  - A clean central campus to support DOE's science mission