

Environmental Management Budget and Cleanup Priorities

March 6, 2012 Public Meeting

Welcome/Opening Remarks	<i>Sue Cange, Acting Manager for EM</i>
EM Overview	<i>Sue Cange</i>
East Tennessee Technology Park Cleanup	<i>Jim Kopotic, Portfolio Federal Project Director (FPD)</i>
ORNL Cleanup and TRU Waste Processing	<i>Laura Wilkerson, Portfolio FPD</i>
U-233 Disposition Project	<i>John Krueger, FPD</i>
Y-12 National Security Complex Cleanup	<i>Laura Wilkerson, Portfolio FPD</i>
Federal Budget Process	<i>Jamie Standridge, OR Planning and Budget</i>
Next Steps	<i>David Adler, Regulatory and Stakeholder Affairs</i>
Questions & Answers	<i>David Adler</i>
Wrap-up	<i>Sue Cange</i>



Fiscal Year 2014 Budget Workshop

Oak Ridge's Vision for the Future

Sue Cange

**Acting Manager for the Oak Ridge Office
of Environmental Management**

March 6, 2012

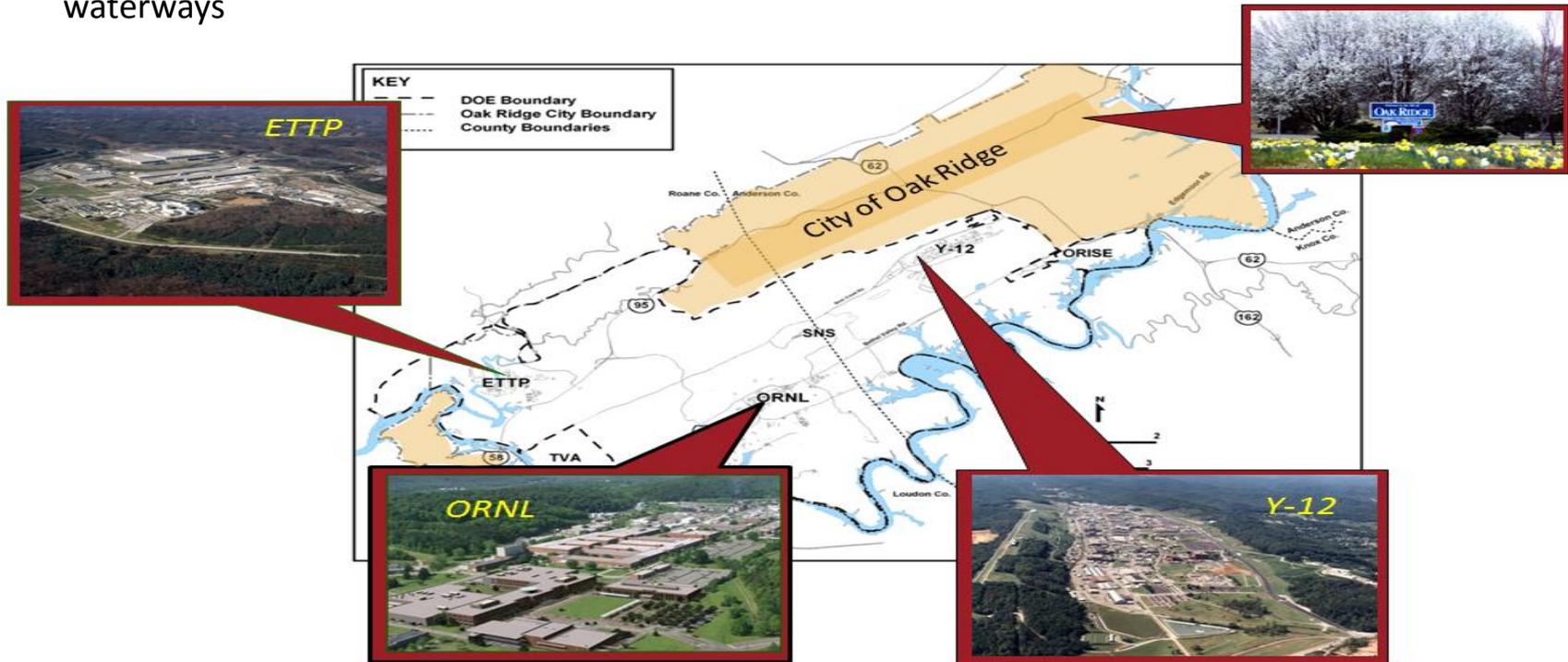
Oak Ridge has a Unique Challenge for Cleanup

Oak Ridge is not an isolated or arid site

- Over 700,000 citizens reside and/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

Oak Ridge is a continuing missions site

- Science, Energy and the National Nuclear Security Administration are investing billions in on-going missions that are vital for our Nation



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
 - Ensure DOE's vital missions of Science, Energy, and National Security

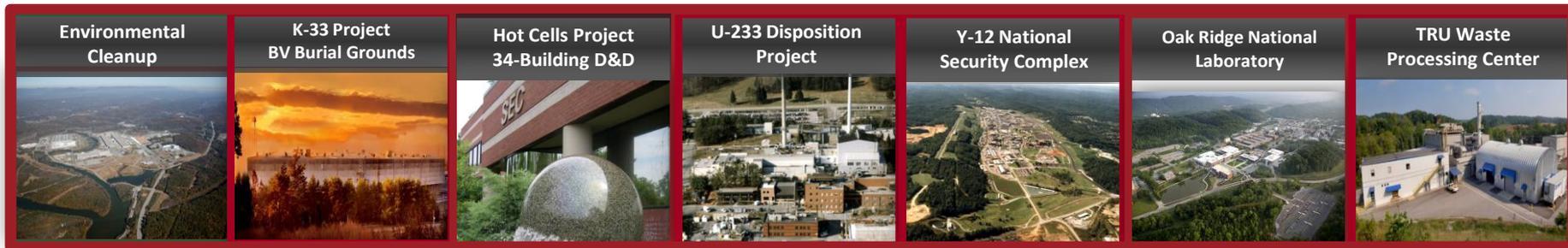
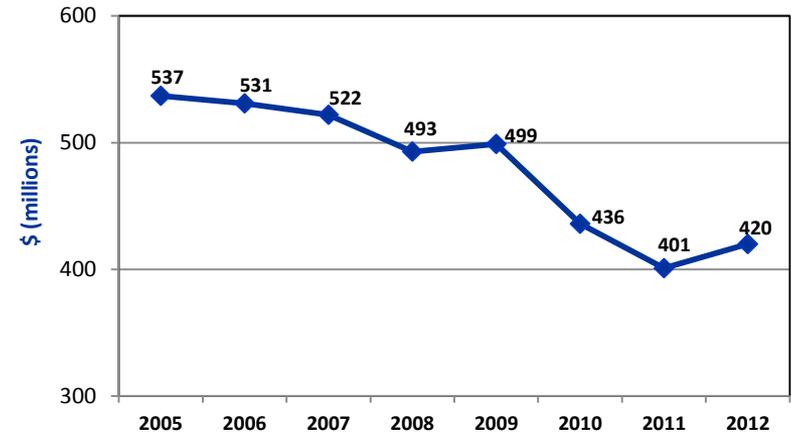
• **Our Projects**

- Include over 40 projects across the Oak Ridge Reservation at the East Tennessee Technology Park, Y-12 National Security Complex and Oak Ridge National Laboratory
- Use Base and Recovery Act Funding (Fiscal Years 2009 – 2013)
 - Fiscal Year 2012 Base funding is approximately \$420 Million
 - Anticipated Recovery Act expenditures in Fiscal Year 2012 are \$115 Million

Oak Ridge is Meeting its Challenges

- Diverse, complex projects
- Reduced budgets
- Little relief on regulatory commitments
- Numerous contractors
- Multiple stakeholders
- Ongoing DOE missions with billions in investment

Historical Base Funding Profiles



Oak Ridge is Positioning for the Future

- **Balancing competing risks**
 - Environmental: Y-12
 - Nuclear/radiological: ORNL
 - Lifecycle cost: ETTP
- **Optimizing progress and efficiencies while maintaining our outstanding safety record**
 - Utilizing our experienced workforce
 - Re-sequencing work activities
- **Looking for innovative ways to perform work**
 - Challenging our approaches
 - Improving use of technology
- **Meeting near-term goals while continuing our longer-term strategic focus**



Oak Ridge has Five Near-term Goals

- Complete demolition of Buildings K-25 and K-27 at the East Tennessee Technology Park
- Continue to identify ways to address mercury releases at the Y-12 site including reducing mercury in surface waters, characterizing potential sources and preparing facilities for demolition
- Remove half of the U-233 inventory at the Oak Ridge National Laboratory (ORNL), and make final decisions on remaining nuclear materials
- Continue processing Transuranic waste (debris) and prepare for construction of a new sludge processing facility
- Reduce risks in the ORNL Central Campus by removing excess nuclear/radiological materials, addressing groundwater contamination and demolishing facilities



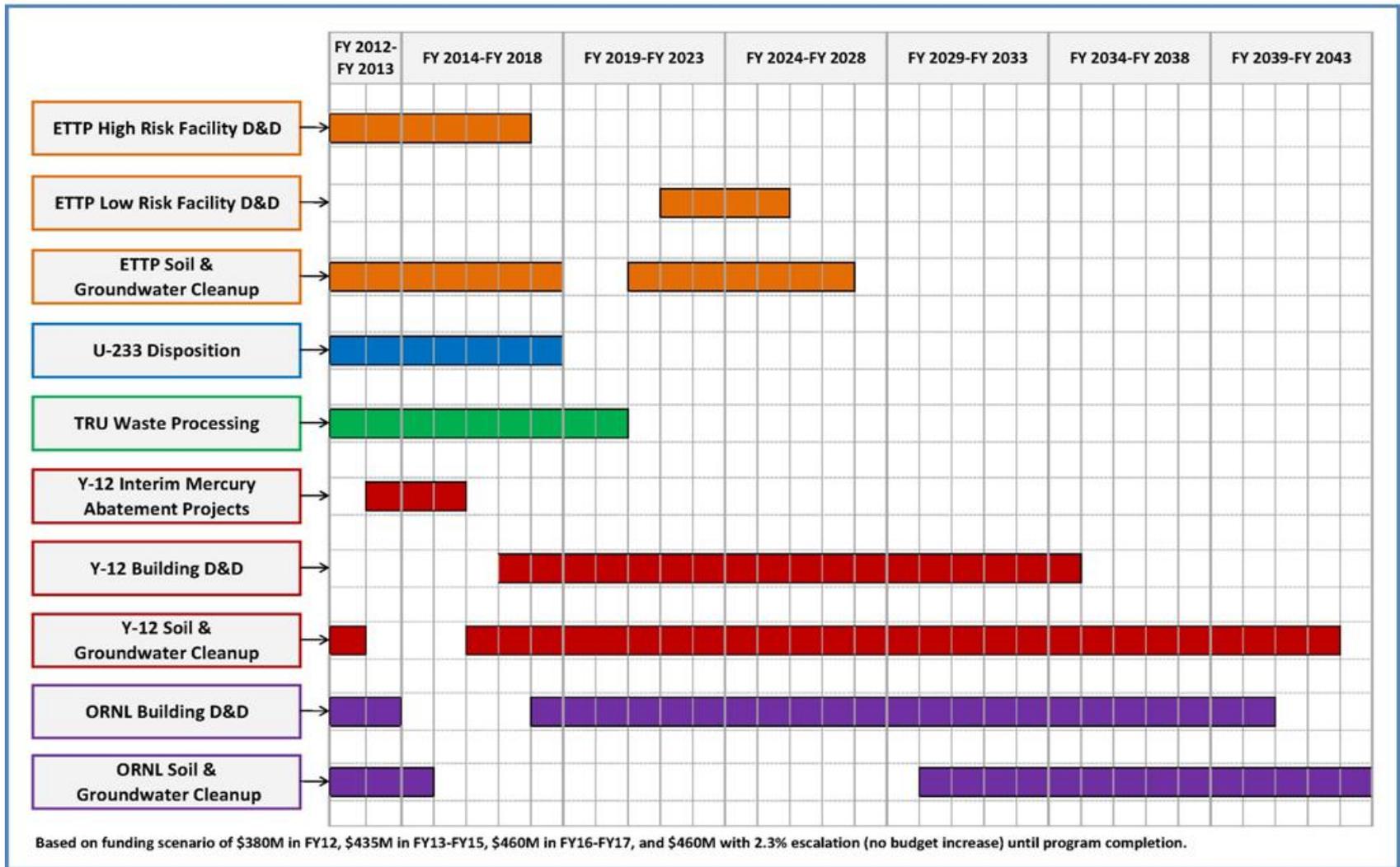
Key Considerations for Oak Ridge's Future

- **East Tennessee Technology Park - Lifecycle Cost Risk**
 - Roughly ½ of the EM-OR budget is spent on minimum safe/essential services, and ~40% of that is spent at ETTP
 - As ETTP facilities continue to degrade, the cost for D&D continues to increase
- **Y-12 National Security Complex - Environmental Risk**
 - Nearly 20 million pounds of mercury was used at Y-12; approximately 2 million pounds are unaccounted for and roughly 700,000 pounds are believed to have been released into the environment
- **Oak Ridge National Laboratory - Nuclear/Rad Risk**
 - Over 26 million curies are currently stored at ORNL along side billions of dollars of Science investment



Strategy is to identify near term priorities while continuing to plan for the future

Oak Ridge's Plan for the Future





ETTP Cleanup

Jim Kopotic
Portfolio Federal Project Director for ETTP

March 6, 2012

ETTP Mortgage Reduction

- **East Tennessee Technology Park (ETTP) is an Environmental Management Site**
 - No Operational Mission other than Environmental Cleanup and Reindustrialization
- **Annual mortgage costs are approximately \$70M (security, surveillance and maintenance, and infrastructure)**
- **Completion of remedial actions and demolition of large buildings (>100 acre footprint) reduces EM mortgage costs**
- **End State is a commercial industrial park**



ETTP Cleanup Issues

- **Large Old Buildings – radionuclides, PCBs, asbestos**
 - Buildings pose a safety hazard to workers
- **Burial Grounds – drummed wastes, cylinders, classified components and contaminated soil**
- **Soils/sediments – chemical wastes (organic and inorganic), radionuclides, PCBs**
- **Groundwater – Organic solvents & volatile organic compounds (TCE most prevalent)**



ETTP Remediation - CERCLA Areas and RODS



- Interim RODs for Zone 1 & 2 approved
- Zone 1 soil actions complete
- Zone 2 soil actions to follow building D&D

ETTP Building Demolition - Site Progress



Accomplishments

Over 250 facilities demolished and 1600 of 2200 acres addressed

- **Completed K-1070-B Burial Ground excavation**
- **Completed fieldwork for Zone 1 Final ROD decision process**
- **Groundwater plumes are stable – Volatile organic compounds are the contaminants of concern**
 - Treatability studies deferred to 2016
- **Initiated K-25 East Wing demolition**
- **Completed K-33 Building demolition**



K-1070-B Burial Ground

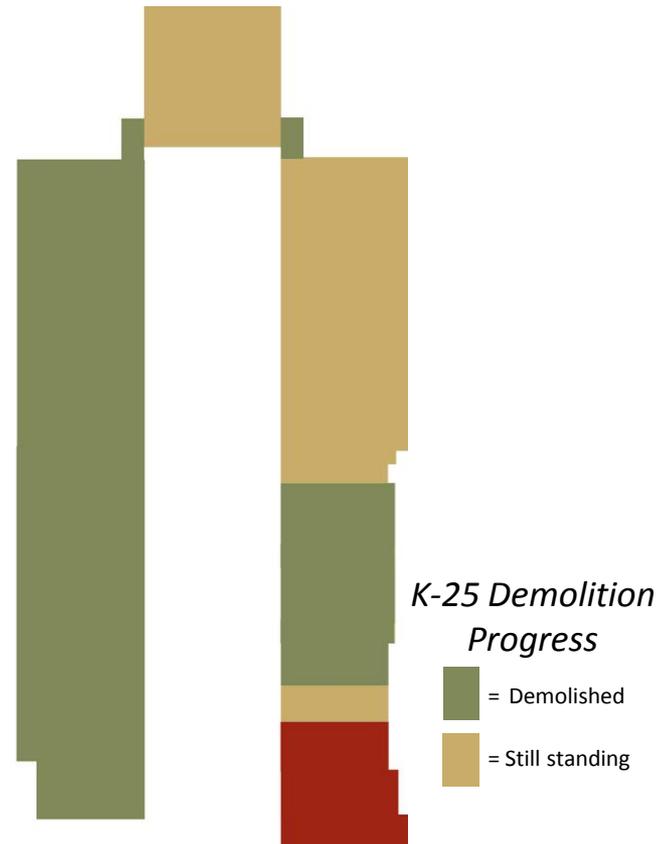


Remaining K-33 Building Slab

Work in Progress

- Complete K-1070-B grading and capping
- Complete K-33 Building Slab and Soils Removal
- Complete CERCLA decision-making process for Zone 1 Final ROD and implement identified remediation scope
- Complete K-25 Non Tc-99 East Wing Demolition
- Characterize miscellaneous facilities and tie lines in preparation for future building demolition

Installing a monitoring well in Zone 1



Near Term Plans

K-25 Demolition Approach

- Clear out vaults and demo North End
- Characterize the Tc⁹⁹ units
- Remove all high Tc⁹⁹ equipment and piping
- Demo Tc⁹⁹ units
- Transition K-25 workers to K-27
- K-25 demo complete – July 2014

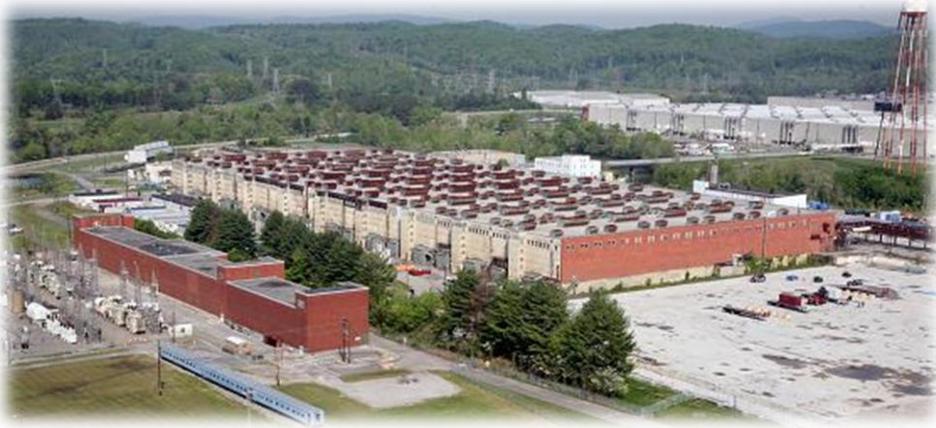


East Wing Segmentation

Near Term Plans (cont.)

Apply Experience and Lessons Learned from Demolition of K-25 Building to K-27

- Use established waste transportation prep and inspection areas from K-25
- Use experienced K-25 sampling crews
- Transition experienced work crews from K-25 to K-27



K-27 Building

EM End State - Long Term Plans



*Actively creating a
Vision for the Future*





EM Cleanup at ORNL

Laura Wilkerson

Portfolio Director for ORNL and Y-12 Projects

March 6, 2012

ORNL's Central Campus Cleanup



Legacy Transuranic Waste Inventory

- The TRU Waste Processing Center (TWPC) characterizes and packages legacy transuranic “TRU” waste for disposal at the Waste Isolation Pilot Plant.
- The Site Treatment Plan for the Oak Ridge Reservation sets regulatory milestones for processing and dispositioning TRU waste inventory.



TRU Waste Processing Center

Recent Accomplishments

- Remediated Tank W-1A, the most significant source of groundwater contamination in Central Campus



Removal and shipment of Tank W-1A

Recent Accomplishments (cont.)

- Capped Bethel Valley Burial Grounds (SWSA 1 and SWSA 3) to reduce risk



Wrapping contaminated pipe found in underground trench.



Installation of gas venting layer



SWSA 3, looking east, after remediation

Recent Accomplishments (cont.)

- **Upgraded Corehole 8 Intercept Extraction System to improve reliability of the system to capture and treat the Corehole 8 plume**



Corehole 8 Extraction Well Drilling

Recent Accomplishments (cont.)

- Demolished 40 excess facilities
- Removed legacy material from over 32,000 ft² of facility space



The 2000 Complex before, during, and after demolition

2061 Stack demolition



3038M before and after legacy material removal

Recent Accomplishments (cont.)

- To date, 102 m³ of remote-handled-TRU (RH-TRU) waste and 416 m³ of contact handled (CH-TRU) waste have been processed



Work in Progress

- Demolition of Building 3026C&D hot cell structures
- Building 3038 legacy material removal



3026C Counting Room demolition



Building 3038 asbestos removal

Work in Progress (cont.)

- Deactivation of 4500 area segment from the aging Central Gaseous Waste System
- Slabs and Soils Remediation
- Liquid and Gaseous Waste Operations and surveillance and maintenance



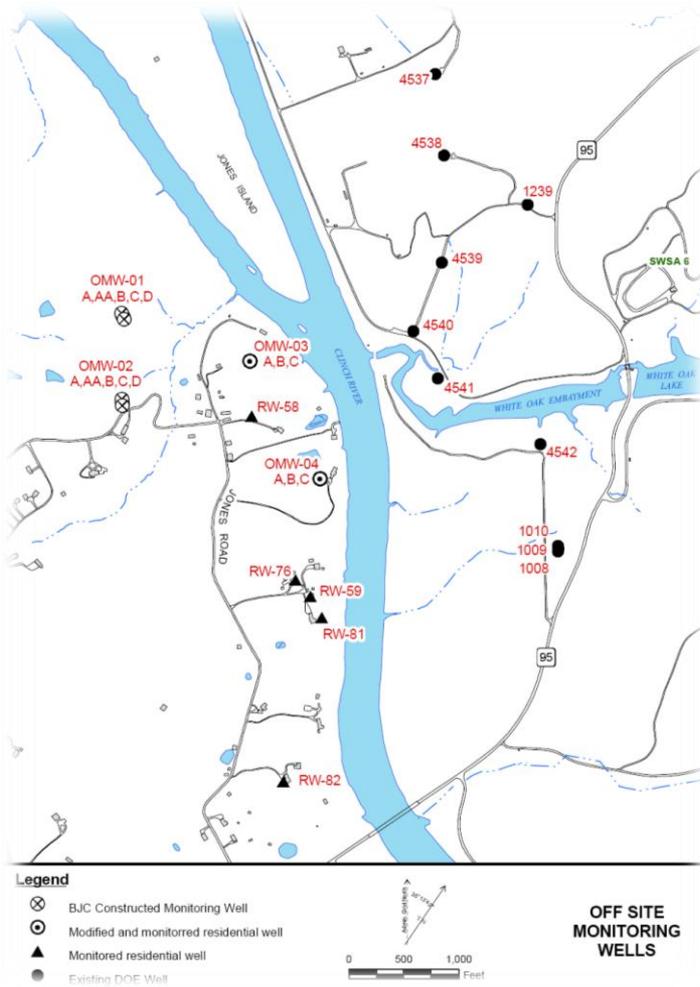
Preparing for 4500 Area upgrades



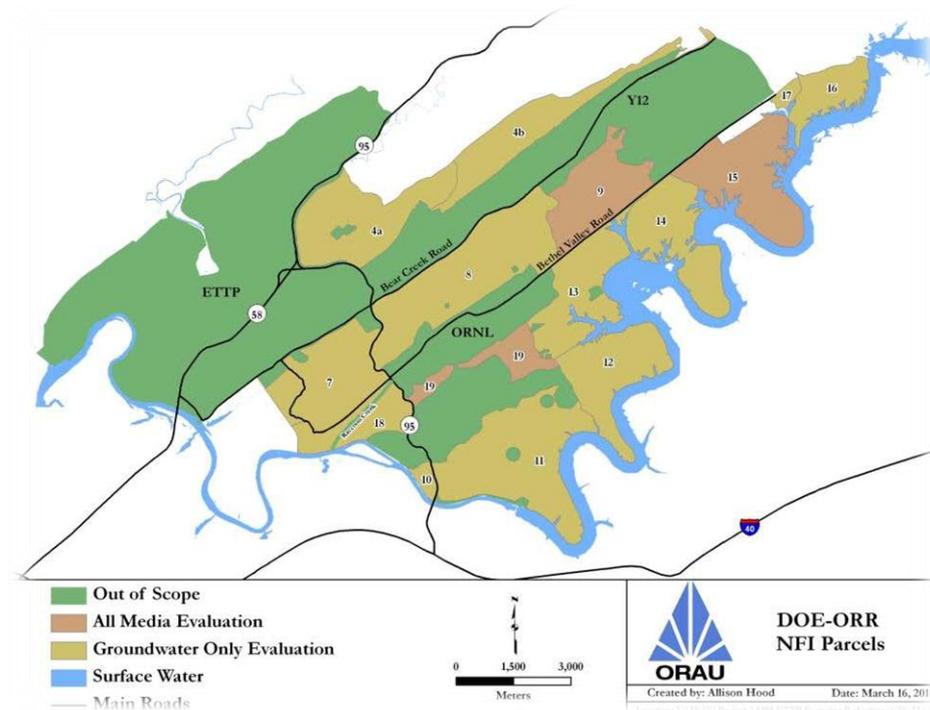
2000 Area Slabs and Soils Remediation

Work in Progress (cont.)

Monitoring Off-site Wells



National Priority List Boundary Investigations



Near-term Plans

- Process and disposition RH and CH TRU waste inventory to meet Site Treatment Plan milestones
- Begin construction of Sludge Processing Annex



Near-term Plans (cont.)

- **Surveillance and Maintenance of excess facilities to ensure protection of the public, the workers, and the environment**
- **Liquid and Gaseous Waste Operations**



3039 Central Stack

Long-term Plans

- **Complete TRU Waste Processing**
- **D&D of facilities to access contaminated soil and eliminate risks**
- **Remove obsolete Central Gaseous Waste System from service**



EM End State - Long-term Plans





U-233 Disposition Program

John W. Krueger
Federal Project Director

March 6, 2012

U-233 Project Background

Building 3019, a 1943 vintage facility at the Oak Ridge National Laboratory, serves as the nation's primary repository for Uranium-233 (U-233).



- U-233 is a special nuclear material requiring strict safeguards, security and nuclear criticality controls. A large percentage of the inventory poses high gamma radiation dose potential to workers and produces millions of curies of highly radioactive gases in the form of Thoron making it very difficult to process.

Work in Progress

- **Executed fixed price contract modification for implementation of the Direct Disposition Campaign on January 1, 2012**

- Includes on-going safe, secure storage, transfer of certain valuable inventory components to other DOE programs, and direct disposal of unwanted inventory that meets waste acceptance criteria without processing
 - Covers approximately 50% of the U-233 inventory in ORNL Building 3019
- To be completed by August, 2014

- **Program Transfers**

- Complete all shipments of Zero Power Reactor (ZPR) Plates to the Nevada National Security Site (NNSS) in FY12
 - Will eliminate 12% of the U-233 inventory when completed
 - ZPR plate transfers now 40% complete



First Shipment, Dec. 19, 2012

Isotek's Shipping Team

Work in Progress (cont.)

- **CEUSP Disposal Planning**

- Involves transport and disposal of 403 Consolidated Edison Uranium Solidification Project (CEUSP) cans
- LWT cask Safety Analysis Report for Packaging (SARP) modification
- Security planning and other disposal site interfaces

- **Phase II Alternatives Analysis**

- Publish Phase II report identifying the most appropriate processing strategy for the remaining 50% of the inventory



Near Term Plans

- **On-going safe and secure storage of U-233**
- **Complete the Direct Disposition Campaign (52% of inventory)**
 - Complete preparations and initiate CEUSP disposal
 - Complete CEUSP disposal by August 30, 2014
- **Complete design and any necessary procurements for physical modifications to the processing facility, consistent with the Phase II recommendation**

Long Term Plans

- **FY15: Complete processing design**
- **FY16: Complete necessary facility modifications**
- **FY17-19: Process all remaining canisters of U-233 and Thorium nitrate solution**



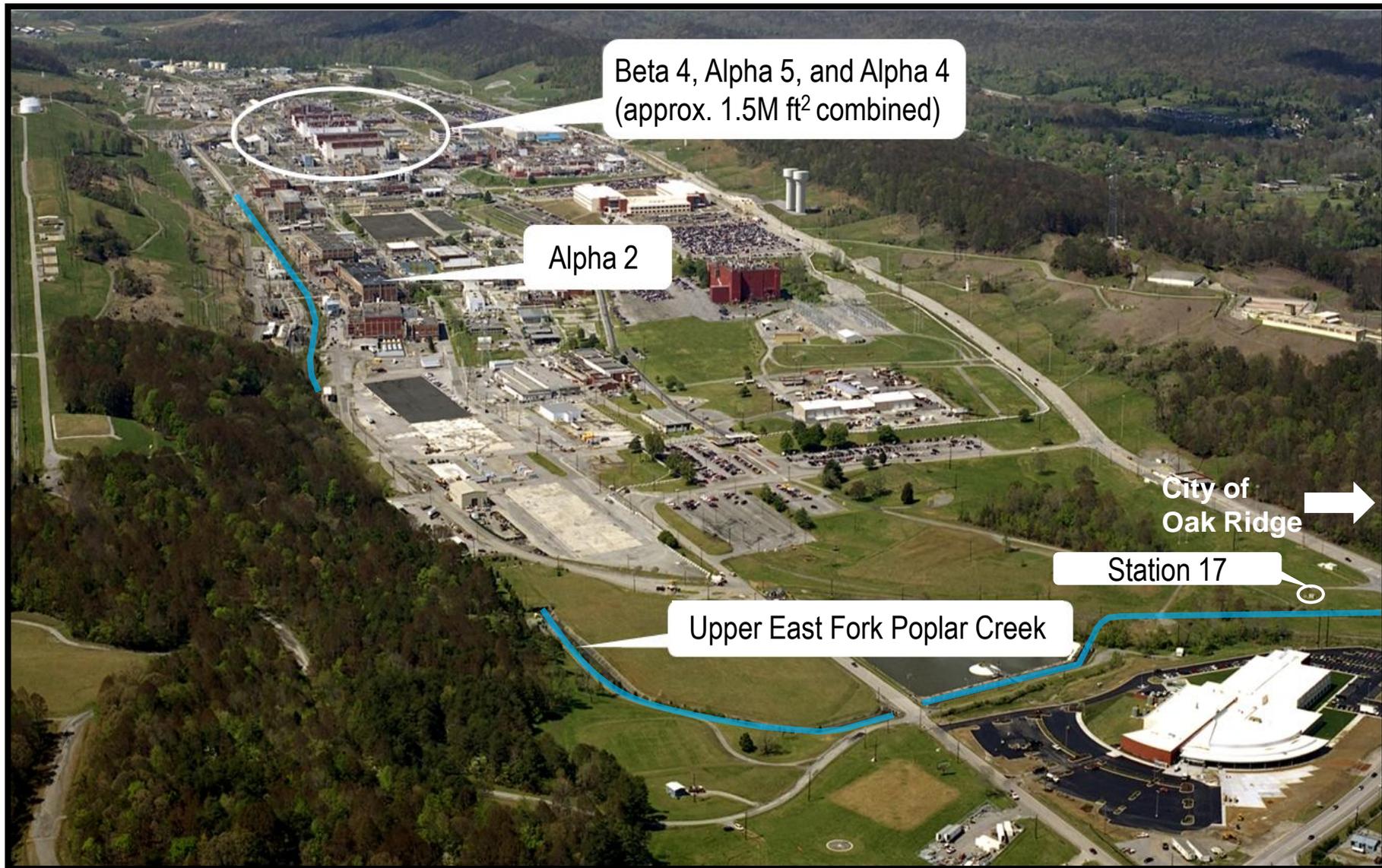


Y-12 Clean-up and Mercury

Laura Wilkerson
Portfolio Director for ORNL and Y-12 Projects

March 6, 2012

Mercury Contamination at Y-12



Significant Remedial Actions have been Implemented

Year(s)	Action
1986 - 1987	Storm drain lining
1993 – 1995	Pipe rerouting
1996	Central Mercury Treatment System
1996 – 1997	LEFPC floodplain soil removal
2001	Bank stabilization
2005 – 2006	Big Spring Water Treatment System at Alpha 2
2010 – 2011	ARRA – WEMA Storm Sewers, OSY Soils, Legacy Material Removal

Bank Stabilization



Big Springs



WEMA Storm Drain Effort



Recent Accomplishments



Old Salvage Yard Scrap Removal Before and After

Recent Accomplishments (cont.)



Alpha-5 Legacy Material Removal Before and After

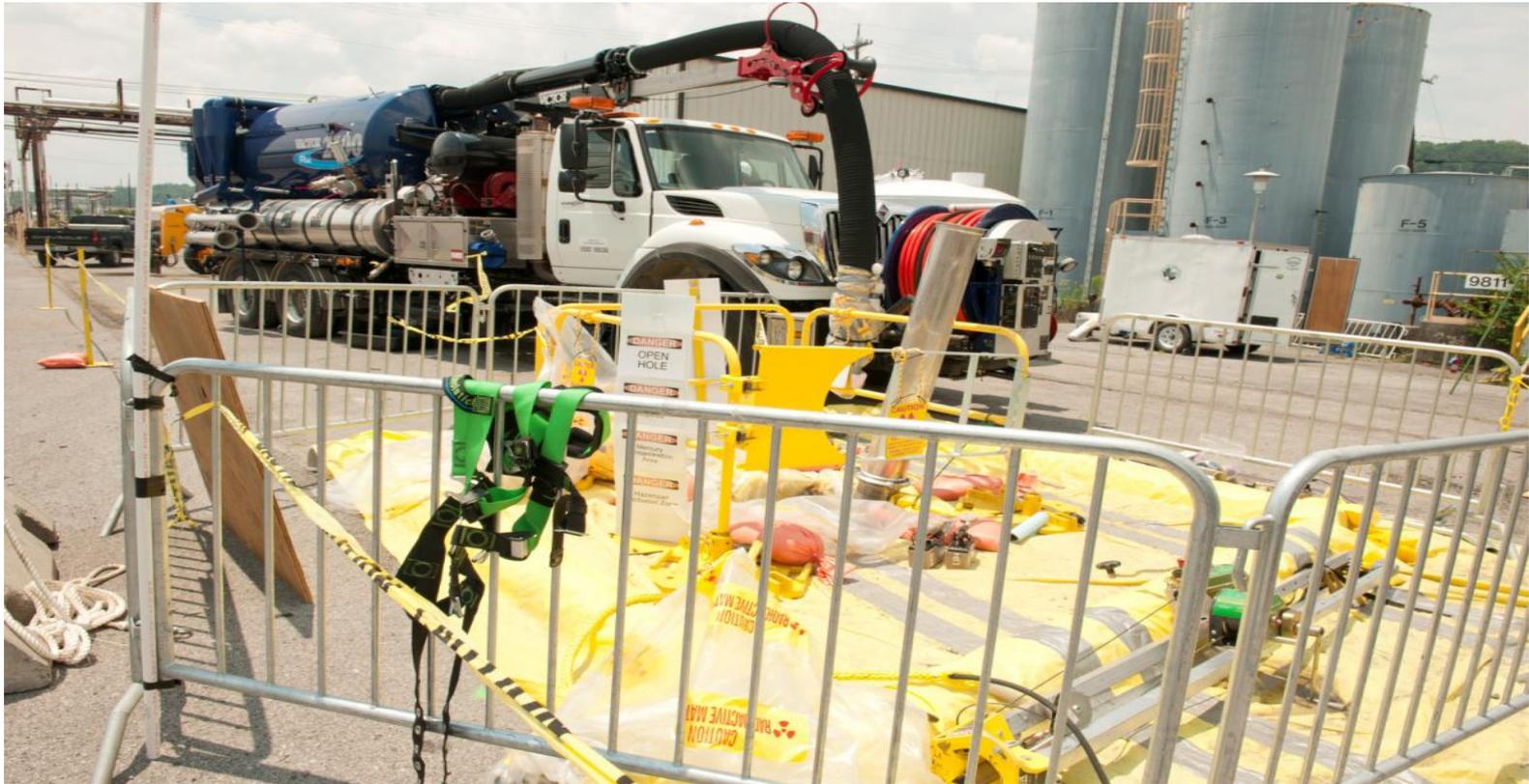


Alpha-5 Characterization



Beta-4 Legacy Material Removal Before and After

Recent Accomplishments (cont.)



WEMA Storm Drain Effort

Recent Accomplishments (cont.)



Building 9206 Filter House



Building 9211 Before, During, and After Demolition

Recent Accomplishments (cont.)

- Expansions of Environmental Management Waste Management Facility (EMWMF) bring total facility disposal capacity to 2.18 M yd³
- Capacity expansion and upgrades of Oak Ridge Reservation Landfills



EMWMF with Cells 5 and 6 Expansions



Oak Ridge Reservation Landfills

Work in Progress (cont.)

- Continued operation of EMWMF and ORR Landfills
- Surveillance and maintenance of EM facilities throughout the ORR
- Water Resources Restoration Program and Water Quality Programs



Alpha 4



Waste Operations



Water Quality Monitoring

Near Term Plans

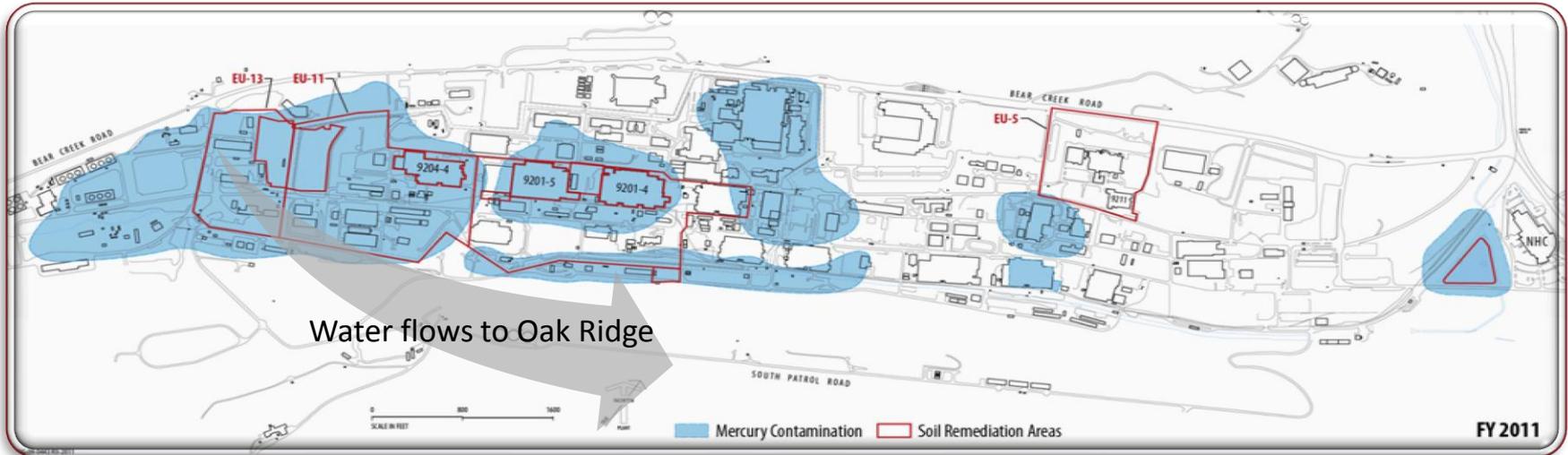
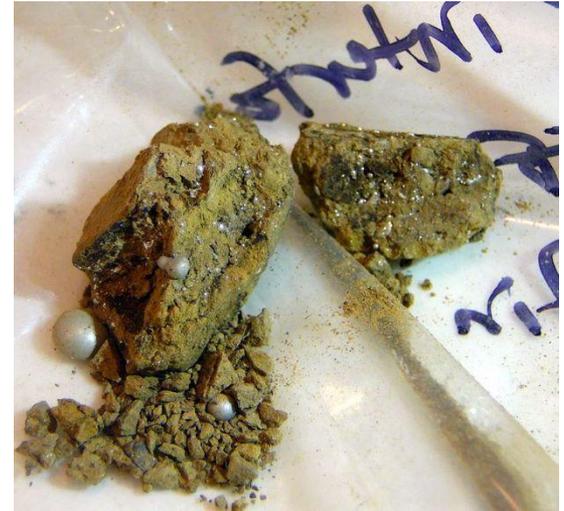
- **Reduce mercury flux**
 - Continue and expand elemental mercury recovery operations
 - Install mercury collection traps
 - Treat storm sewer outfall discharges
 - Remediate hot spots
- **Characterize and plan for waste disposal**
- **Prepare facilities for D&D**



Outfall 200 at Y-12

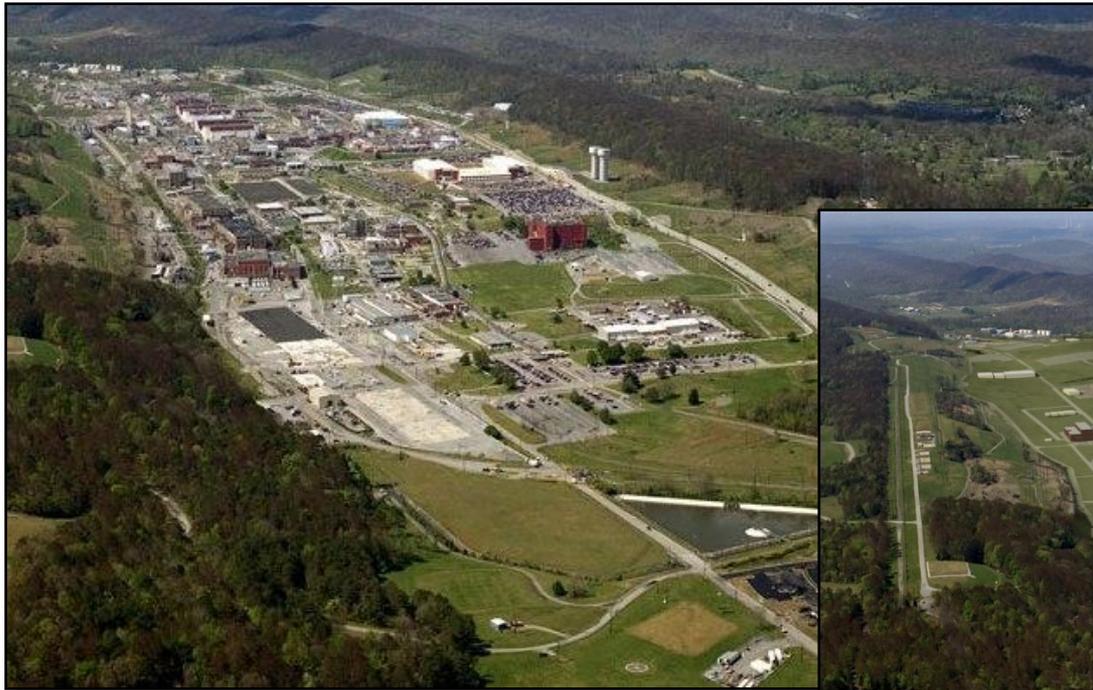
Long Term Plans

- Sources of contamination must be removed or stabilized
- Address the sources in a “West to East Approach”



EM End State - Long Term Plans

- DOE Legacy cleanup complete
- High Security footprint reduced
- Modernized Y-12 incorporating new facilities





How does the DOE Budget Process Work?

Timeline, Key Players, and Results

Jamie Standridge

Oak Ridge Office

U.S. Department of Energy

March 6, 2012

FY 2011 Federal Spending- \$3.6 Trillion

Medicare/Medicaid	21%
Social Security	20
Defense Department	23
Discretionary	13
Other Mandatory	17
Net Interest	6
	<hr/>
	100%

Congressional Appropriations Subcommittees

Agriculture	Commerce, Justice, Science	Defense	Energy and Water
Financial Services	Homeland Security	Interior and Environment	Labor, HHS, Education
Legislative Branch	Military Construction, VA	State, Foreign Operations	Transportation, HUD

Scope of Energy and Water Subcommittee

Title I: Corps of Engineers

Title II: Interior – Bureau of Reclamation

Title III: Department of Energy

Title IV: Independent Agencies (TVA, NRC, ARC, and DNFSB)

FY 2012 Congressional Budget Process

March - April	Subcommittee Hearings
May - August	Appropriations Committee Mark Ups-House and Senate
September	Conference Action on Bill
October	Continuing Resolution Enacted
December	President Signs Bill
December	OMB Apportions Fund to DOE
January	OR Receives Quarterly Apportionments

Oak Ridge FY 2013 President's Budget Summary by Assistant Secretary

(Energy & Water Appropriations)
(Budget Authority in Millions of Dollars)

Assistant Secretary	FY 2012	FY 2013
Science	704	750
Environmental Management (EM) (Program Direction \$16M)	437	436
NNSA	1,320	1,458
Energy Efficiency & Renewable Energy	138	138
Nuclear Energy	61	55
Other DOE ORO	26	26
Subtotal DOE ORO	2,685	2,863
Work for Others-ORO	500	500
Total Oak Ridge	3,186	3,363

Formulation of President's Budget

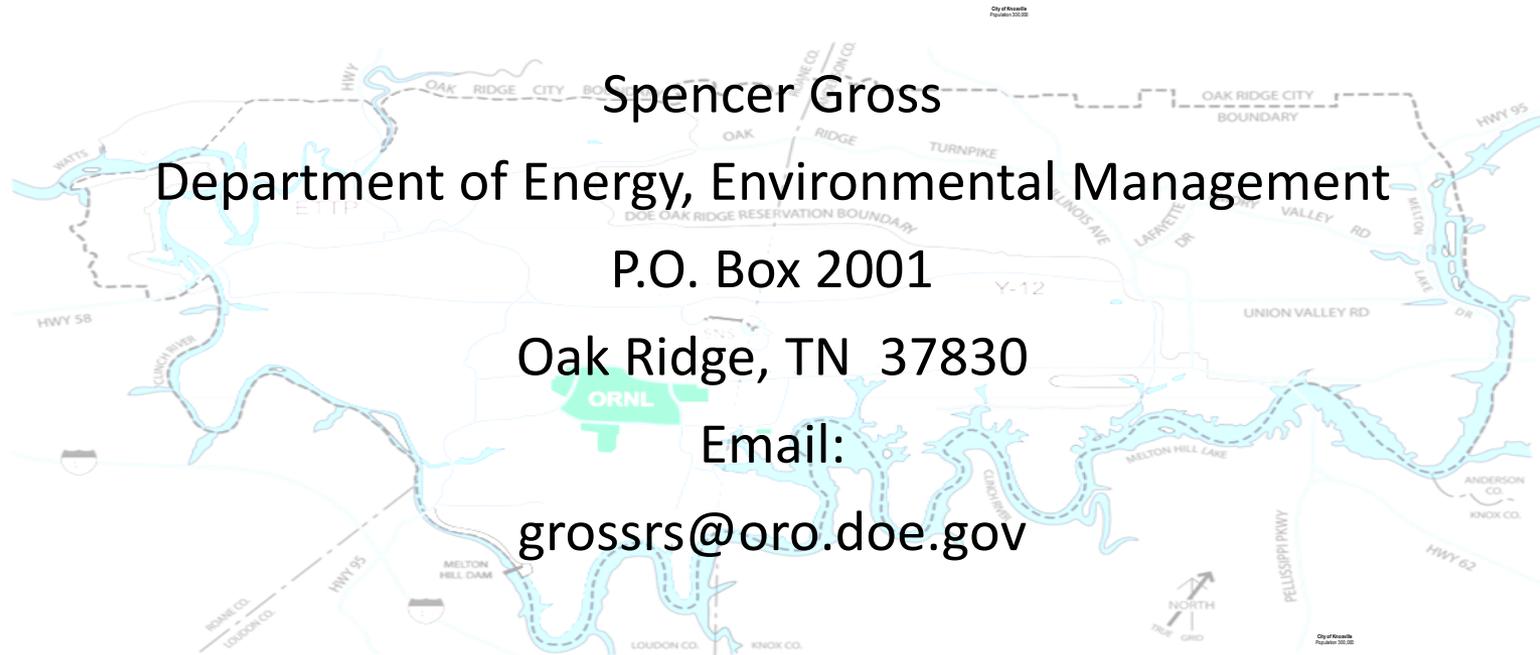
April	Submission of Field Budget to HQ
July	Corporate Budget by Secretary
September	DOE Budget Submitted to OMB
November	OMB Passback
December	DOE Appeal of OMB Passback
February	President's Budget Released to Congress

Budget Results

- **DOE Budget supports payroll 13,000 people, 4th largest employer in Tennessee**
- **The largest DOE program for Oak Ridge is NNSA, followed by SC and EM.**
- **Approximately 2,500 separate tasks are supported by the Oak Ridge budget**
- **It takes 18 months from the time the budget request is developed to the receipt of funds**

Written Comments

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