



U.S. DEPARTMENT OF
ENERGY



2010 Congressional Nuclear Cleanup Caucus

Oak Ridge, Tennessee

February 25, 2010

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MANAGER, OAK RIDGE OFFICE
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ASSISTANT MANAGER FOR ENVIRONMENTAL MANAGEMENT



EM *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

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EM is embarked on a Journey to Excellence

Our Vision:

“EM completes quality work safely, on schedule and within cost and delivers demonstrated value to the American taxpayer.”



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EM Mission and Priorities

“Complete the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development, production, and Government-sponsored nuclear energy research.”



- Activities to maintain a safe, secure, and compliant posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent nuclear fuel storage, receipt, and disposition
- Special nuclear material consolidation, processing, and disposition
- High priority groundwater remediation
- Transuranic and mixed/low-level waste disposition
- Soil and groundwater remediation
- Excess facilities deactivation and decommissioning (D&D)



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EM Program Goals

- **Risk Reduction**
 - Ensure the safety and health of the public and the workers
 - Protect the environment
 - Reduce the EM footprint by 90% by 2015
- **Maintain Compliance**
 - 37 compliance agreements with state and federal regulatory agencies
 - Complete building the capability for dispositioning tank waste, nuclear materials, and spent nuclear fuel
- **EM American Recovery and Reinvestment Act Goals**
 - Thousands of jobs created or saved
 - Reduce the EM footprint by 40% by 2011
- **Improve Project Performance**
 - Improve construction project performance
 - Deliver all projects on time and within cost
 - Get EM projects removed from the GAO High Risk List
- **Establish strategic options for Special Nuclear Materials, Spent Nuclear Fuel, Radioactive Tank Waste, Groundwater and Excess Facilities not currently in the EM portfolio**
 - Overall objective is to reduce life-cycle costs and shorten the period of program execution



EM Strategic Goals

- Improve **Safety Performance** with the goal of zero accidents/incidents
- Improve **Project Management**
 - Restructure the project portfolio
 - Adapt the Office of Science construction project model to EM
 - Construction Project Review, front end planning; appropriate pricing and contingency
 - Establish Performance Metrics for EM operating projects
 - Align project and contract management
 - Streamline the acquisition process
- Achieve **Excellence in Management and Leadership** with the objective of making EM an employer of choice in the federal government
- Align **Headquarters and Field Operations** in order to streamline decision making and improve efficiency
- Utilize **Science and Technology** to optimize the efficiency of tank waste, excess nuclear materials, spent nuclear fuel and groundwater treatment and disposition
 - Evaluate programmatic alternatives to smartly reduce the cost of the program and period of execution



OAK RIDGE RESERVATION



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Key Oak Ridge Missions



- **Oak Ridge Office**

- Science and Technology
- Science Education
- Environmental Cleanup
- Energy & Nuclear Fuel Supply
- National Security
- Technology Transfer

- **Integrated Support Center**

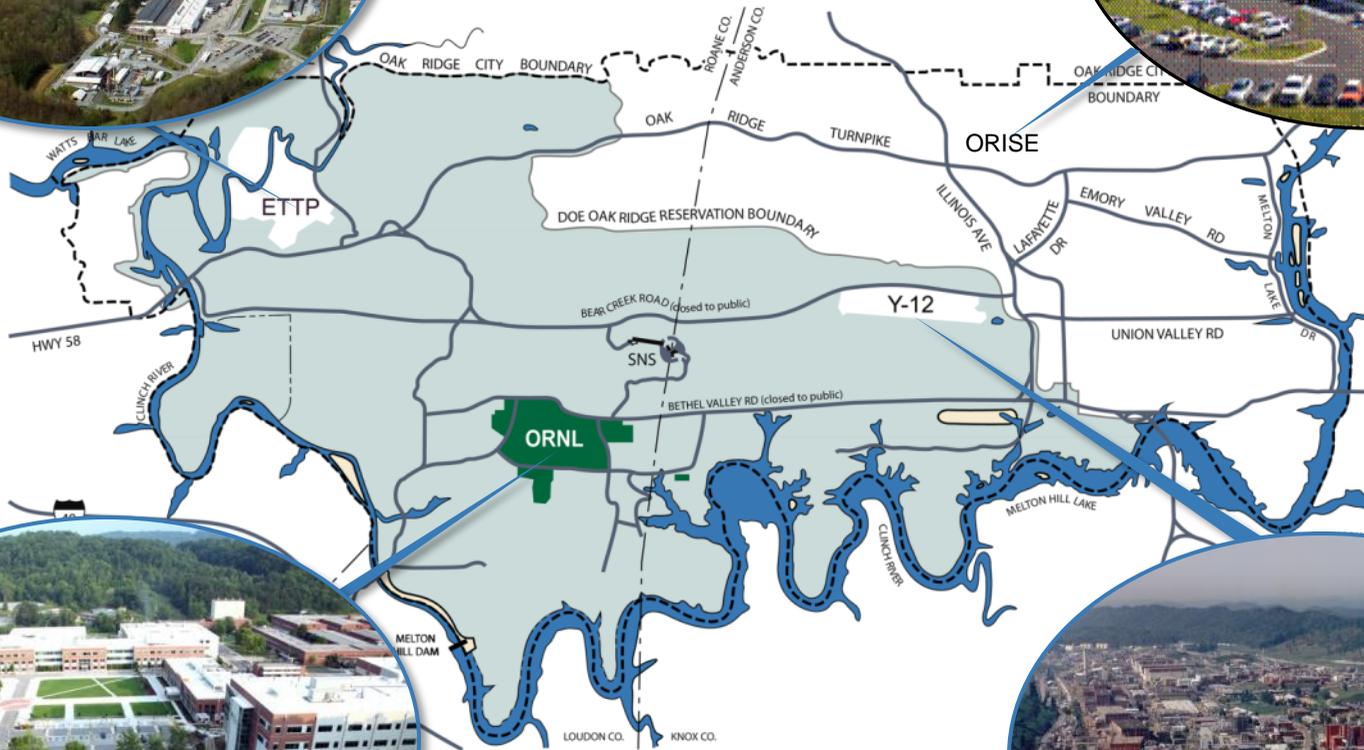
- Support to SC Lab Sites
- Payment Center
- Other Site Support



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A Leading World Research & Advanced Manufacturing Park



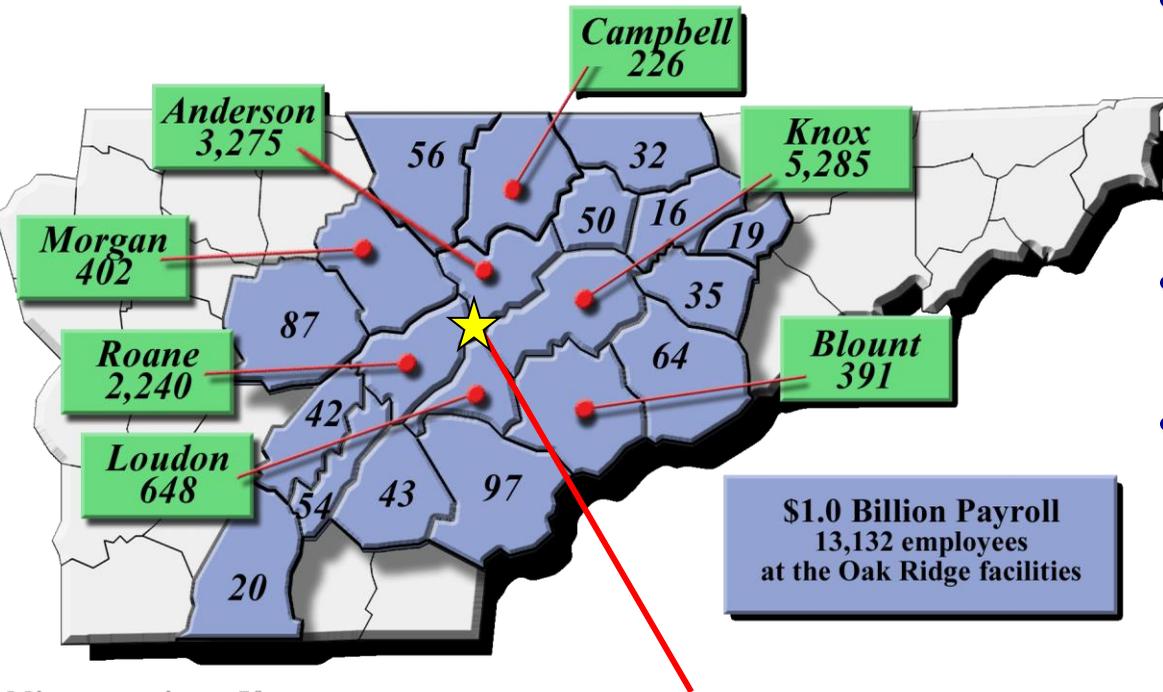
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Economic Impact of DOE Programs in Tennessee

- **Regional Impact**



•Oak Ridge Reservation

- **Statewide Impact**

- \$3.7 billion – increase in gross state product
- 62,000 – full-time jobs supported
- \$75 million – state and local sales tax paid
- 4th – largest employer in the State of Tennessee

\$1.0 Billion Payroll
13,132 employees
at the Oak Ridge facilities



Oak Ridge EM Cleanup Approach

Accomplishments

Legacy Cleanup to Date

- Three-Building D&D Project (clean-out of K-29, K-31, K-33)
- Legacy waste
- Melton Valley (greatest off-site risk; 250 acres cleaned-up)
- DUF₆ cylinders (> 6,000)
- Gunitite Tanks remediation (8 underground tanks—78,000 Ci)
- 370 Bldgs. and 3.64M sq. ft. completed through FY 2009
- TSCA Incinerator shutdown, undergoing RCRA closure
- Offsite facilities completed
- ETTP D&D (*i.e.*, K-25, K-33, 1037, Poplar Creek Facilities)
- TRU Waste Processing
- U-233 Disposition

Ongoing

Legacy Cleanup
(Current EM Scope)
666 Buildings
14.4M square Ft.

Excess Mission Program
Facilities (NE, SC, and NNSA facilities not under current scope) 222 Buildings 4.1M square Ft.

Excess Mission Program Facilities

- Excess facility issues can impact ongoing missions at Oak Ridge National Laboratory (ORNL) and Y-12 National Security Complex (Y-12)
- Management of excess facilities consumes resources needed for modernization
- Modernization efforts need to be coordinated with cleanup efforts



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ORO Budget Summary

<i>Energy & Water Appropriations Budget Authority in Millions of Dollars</i>	FY 2008	FY 2009	FY 2009 ARRA	FY 2010	FY 2011 REQUEST
Environmental Management (EM)	\$493	\$499	\$755	\$436	\$450

*Excludes program direction and Uranium/Thorium



Major Project Accomplishments

Demonstrating Results

✓ **DONE**

• Legacy Waste



• Three Building D&D Project



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Major Project Accomplishments

Demonstrating Results

•DUF6



✓ **DONE**

✓ **DONE**

•Melton Valley



✓ **DONE**



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Major Project Accomplishments

Success Achieved: Witherspoon Scrap Yards Project

- Two privately owned sites in South Knoxville
- Received scrap equipment and parts from DOE Oak Ridge sites from the 1950's-80's
- Contaminated scrap left outdoors, radioactivity & chemical elements leached into soil



TRU Waste Processing Center and U-233 Projects

TRU Waste Processing Facility



- **Constructed for the processing of Supernate, Contact Handled (CH) and Remote Handled (RH) Transuranic Waste**
- **Have accelerated waste processing via a two-shift operation under ARRA**
Completion dates:
 - CH - 2013
 - RH - 2014

- **Safe, Secure and Cost Effective Permanent Disposition of U-233 (Building 3019)**
- **Completion date: 2021**

U-233 Disposition Project (Building 3019)



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East Tennessee Technology Park



Before



**Planned
End State**



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East Tennessee Technology Park

K-25 Building



- **Cleaning out & demolishing K-25 Building**
- **Continued excavation of classified landfill (K-1070B)**
- **Cleanup of K-770/powerhouse area**

TSCA Incinerator



- **Treated 35 million pounds of MLLW/PCB waste since 1991**
- **Completed operations December 2, 2009**
- **D&D of the Incinerator: 2014-2016**



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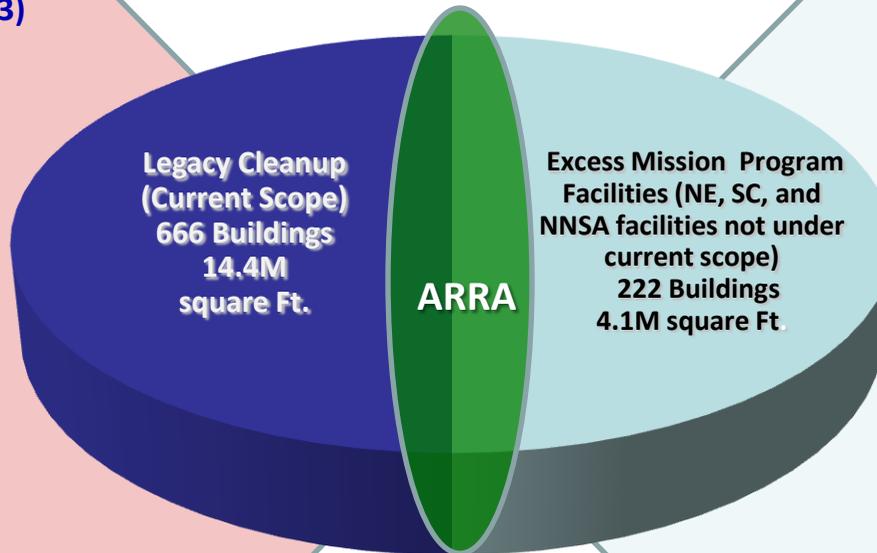
EM Cleanup Approach

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Ongoing

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ARRA Footprint Reduction

- Y-12: D&D of 5 excess facilities
- ORNL: D&D of 28 excess facilities
- ETPP: K-33 Demolition



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Oak Ridge National Laboratory



Before

- 327 excess buildings
- 1.5 million square feet
- Radiological contaminants (Transuranics, Strontium, & Cesium)
- Over 26 million curies

- Cold War Legacy cleanup complete



Planned End State



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Y-12



Before

- 112 excess buildings
- 3.8 million square feet
- 2 million pounds of Mercury lost dating back to Cold War

- Modernization Y-12 incorporating new Uranium Processing Facility & Highly Enriched Uranium Manufacturing Facility
- Cold War Legacy cleanup complete



After



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OAK RIDGE EM ARRA WORK

\$755M for 24 Discrete Environmental Cleanup projects across the Oak Ridge Reservation

Execution of EM ARRA work involves four sites, four prime contractors, three DOE program offices, and three funding sources: Defense, Non-Defense, and UED&D

- **As of December 31, 2009, recipients reported saving or creating 1,284 direct FTE**
- **ORNL (SC):** Multiple contracts (\$230 M)
 - Approximately 82,656 Square Feet Demolished
 - UT-Battelle will execute subcontracts
 - *Bechtel Jacobs Company will self-perform and execute contracts*
 - Oak Ridge Office will administer three ID/IQ prime contracts



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- **Y-12 (NNSA):** B&W Y-12 will manage the work through subcontracts (\$327 M)
 - ORO Environmental Management program will provide oversight, along with Y-12 Site Office
 - Approximately 150,855 Square Feet Demolished
- **ETTP (EM):** Bechtel Jacobs will perform work on K-27 at ETTP; IDIQ Contract to perform K-33 demolition at ETTP (\$118 M)
 - TRU Waste Processing Center: Additional shift work added on to existing contract (\$80 M)



JOE NEMEC, PRESIDENT AND GENERAL MANAGER

Bechtel Jacobs Company, LLC



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Scope of Work

- East Tennessee Technology Park (ETTP) Remediation
 - K-25 demolition & waste disposal (historic mile-long uranium enrichment facility built in 1943)
 - Demolition and preparation for demolition of other facilities
 - Remediation of soil, ponds, scrap yards, and burial areas
- Assist transfer of land and buildings for private use
- Operation of treatment facilities and landfills
- Cleanup of other specified areas
- Complete five American Recovery and Reinvestment Act projects



East Tennessee Technology Park



Environmental Management Waste Management Facility



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Radio Frequency Identification Transport System Harnesses Technology

- Truck Identification Number and Tare Weight programmed on Radio Frequency Identification Device (RFID) Tag
- Handheld device interacts with RFID Tag
- Electronic shipping document is written to RFID Tag
- Data on tag is “read” by RFID towers and sent to Waste & Transportation systems
- Waste coordinates at Environmental Management Waste Management Facility (EMWMF) written to RFID Tag
- Cycle time information is monitored by Transportation Operations and Security



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Extensive Demolition and Remediation Has Been Accomplished at ETTP



- Characterized 277 facilities
- Deactivated 295 facilities
- Demolished 224 facilities
- Reduced footprint by 2.11 million ft² (includes 839,112 ft² for the K-25 Building West Wing)



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K-25 Building West Wing Demolition Is Complete

- Demolition began Dec. 16, 2008; completed Jan. 20, 2010
- More than 9,000 tons of debris being shipped for disposal



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ETTP Ponds Are Remediated

- Remediated 3 ETTP contaminated ponds near Highway 58
- Approximately 8.5 tons of fish were removed from the ponds and replaced with species that do not stir the contaminated sediment
- The largest pond was drained, recontoured, and revegetated



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TSCA Incinerator Mission is Complete

- Completed its mission and permanently shut down on December 2, 2009; currently undergoing RCRA closure
- Treated 35.6 million pounds of liquid and solid wastes from 24 different DOE sites across the country since 1991
- Participated in RCRA, TSCA, and air environmental audits conducted by TDEC and EPA regulators with no Notices of Violation



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Waste Management and Transportation Operate As a System



3.2 million safe miles
driven to EMWMF,
ORR Landfill, Nevada
Test Site, and Energy
Solutions since
December 2004



More than 19,000 safe
shipments made in
FY 2009



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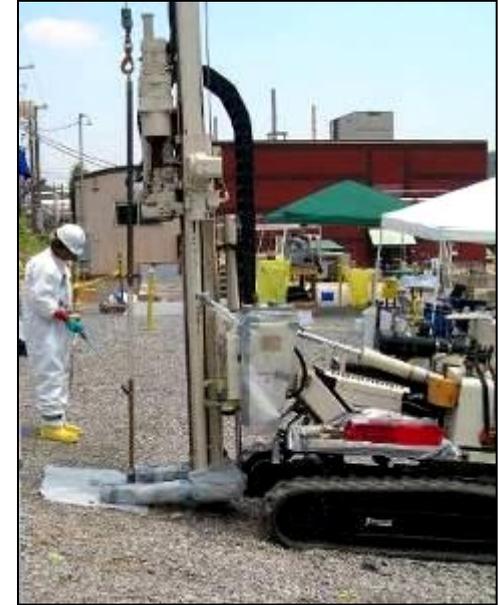
American Recovery and Reinvestment Act Projects Are Under Way



Melton Valley Well Installation



EMWMF Expansion



Tank W-1A Remediation



ORR Landfill V Expansion



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