U.S. DEPARTMENT OF ENERGY

Portsmouth/Paducah Project Office Briefing to

The Nuclear Cleanup Caucus

March 22, 2012

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Portsmouth Site

Portsmouth/Paducah Project Office Vision:

"Safely accelerate cleanup, ensuring protection of the public and environment."

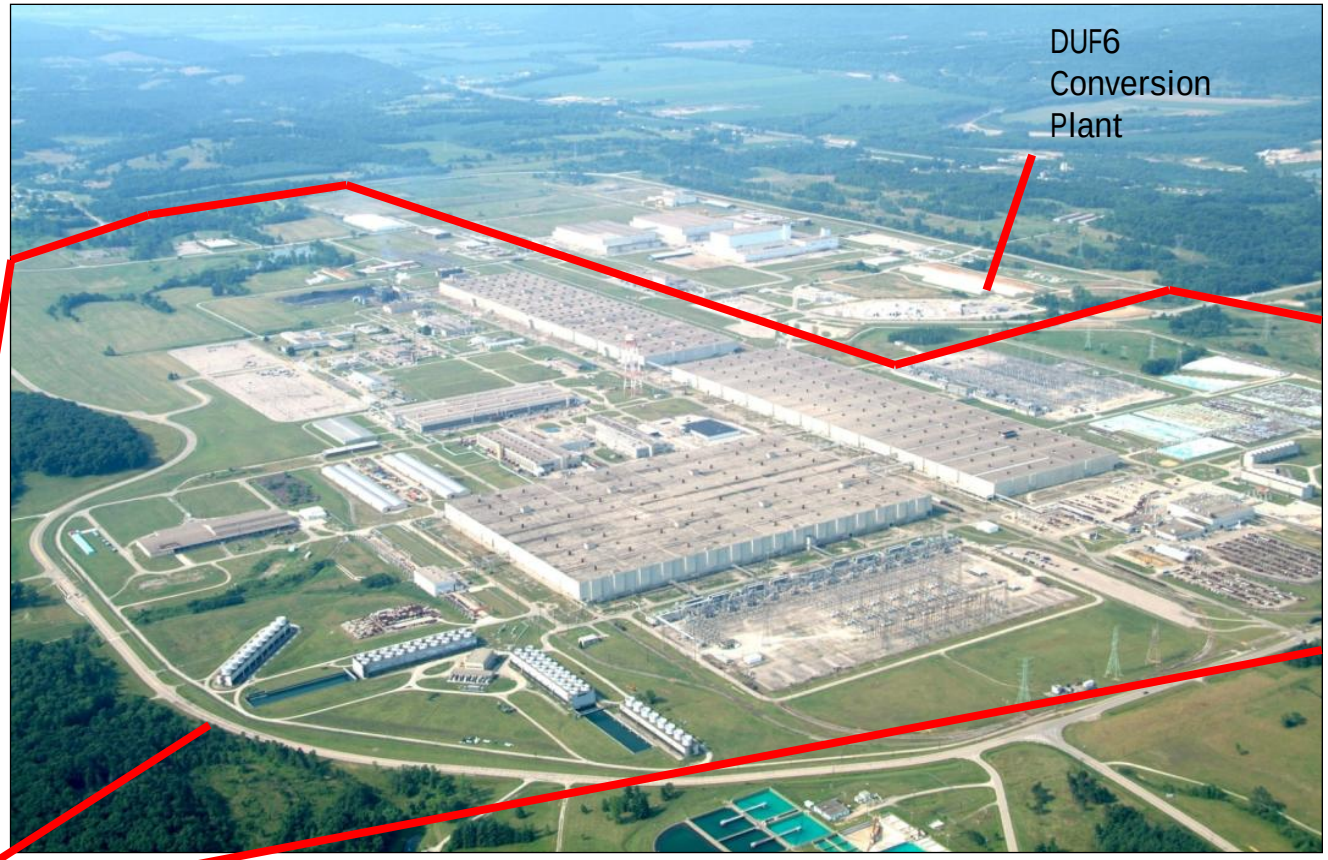
Demographics:

- Approximately 2,700 employees
- 3,777 acres

Cleanup Activities:

- DOE Decontamination and Decommissioning (D&D) Project
- DOE Depleted Uranium Hexafluoride (DUF6) Conversion Project

Portsmouth



Funding for Cleanup

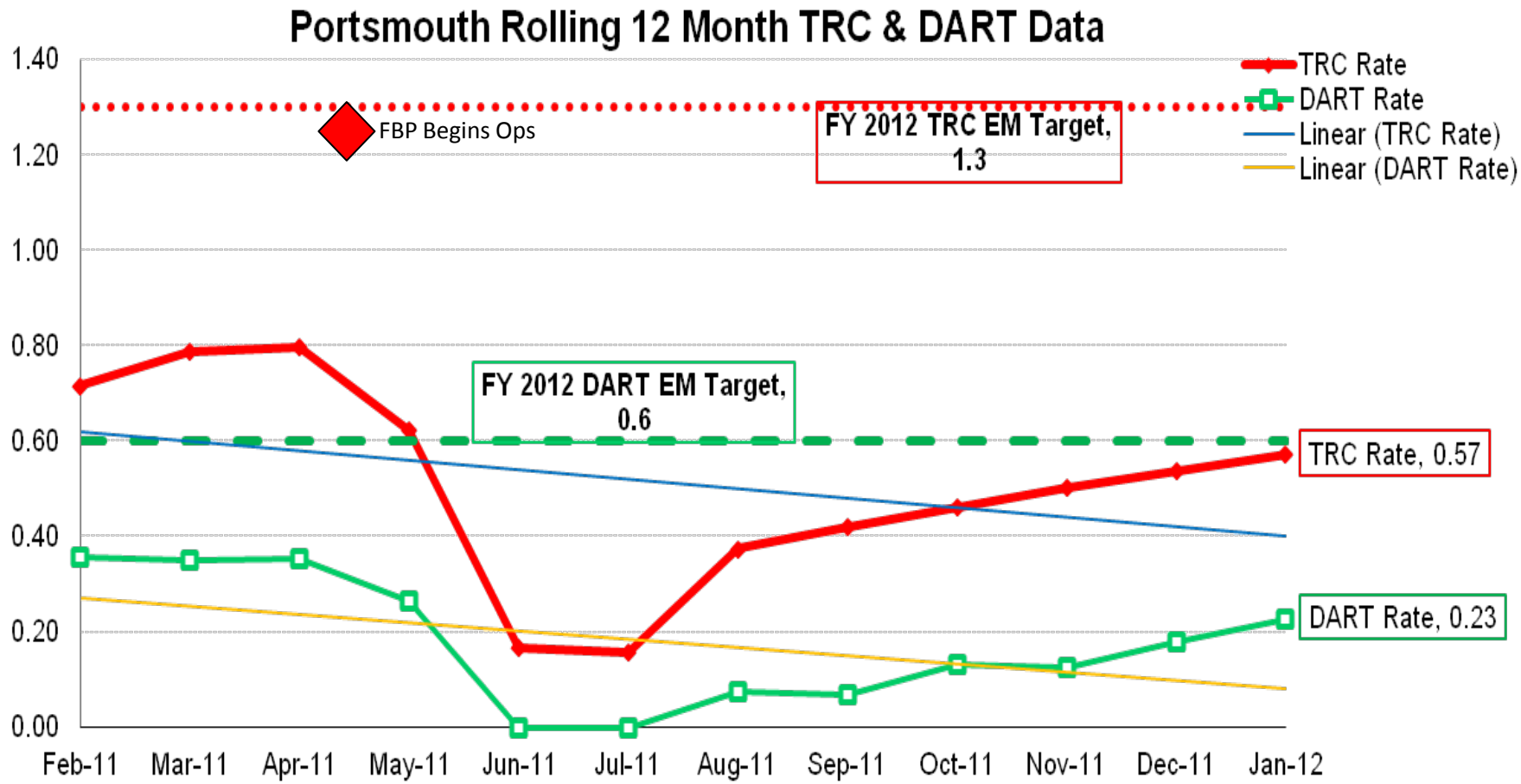
	FY 11 Appropriations In Millions	FY 12 Current Appropriations In Millions	FY 13 Congressional Request In Millions
Portsmouth Gaseous Diffusion Plant	$257.6	$254.5	$186.7
Uranium transfer for accelerated D&D work	$215.3	$200[1]	$200[1]
TOTAL	$472.9	$454.5	$386.7

1. Assumes current Uranium market conditions

Accomplishments

- Partnered with regulators to start D&D work 3 years early
- Accelerated de-lease of 3 major process buildings & ~100 balance-of-plant facilities
- Safely completed DOE's most complex transition
- Completed 8 projects, $138M of scope with $118M of American Recovery and Reinvestment Act (ARRA) funding
- Shipped 1.25M cubic feet of waste off-site
- Began removal of highly contaminated equipment
  - Sets stage for major building demolition

Transition Safety



- Maintained safe operations despite complex transition

Total Recordable Cases (TRC)
Days Away, Restricted or Transferred (DART)

ARRA Projects at Portsmouth

☑X-701B Soils Treatment of 70,000 sq ft (1/11)

☑Repackaging & Disposition of 2,900 Metric Tons of Excess Uranium Materials (7/11)

☑ 21-acre X-633 Cooling Tower Complex D&D (6/10)

☑Excess Material Disposition (9/11)

☑ 20-acre X-533 Electrical Switchyard Complex D&D (12/10)

☑X-760 Chemical Engineering Building D&D and Slab (6/10)

Completed Project Work

X-533 Switchyard

February 2010

January 2011

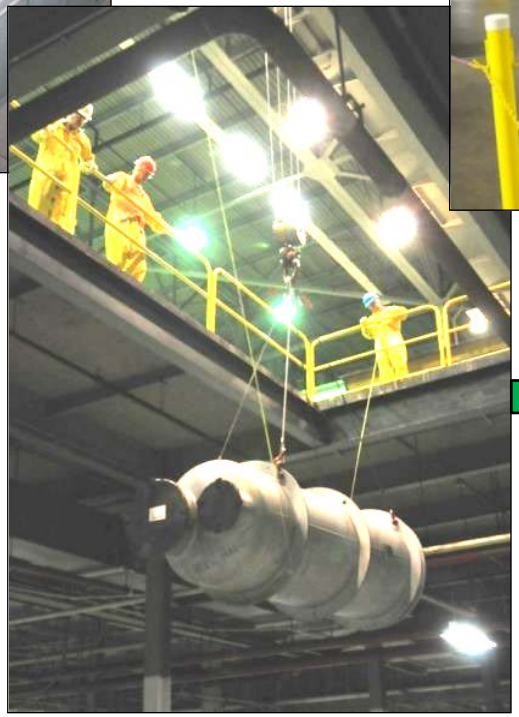
Completed Project Work

X-630 Recirculating Cooling Water Complex

Process Gas Equipment Removal

Converters as shown through an open cell housing on the cell floor (2nd floor) of the X-326 Process Building

Cut & Cap



Removal

Converter being lowered through the cell floor (2nd floor) to the operating floor (1st floor) of the X-326 Process Building

Converters being staged for packing and shipment on the (1st floor) of the X-326 Process Building

Staging

Converters after wrapping ready for packing and shipment

Wrapped for Packaging

Portsmouth/Paducah Project Office Cleanup Progress

Fluor-B&W Portsmouth / Portsmouth, Ohio

March 22, 2012

Presented by

Dennis Carr

Deputy Project Director

Gaseous Diffusion Plant D&D Contract

- Fluor and B&W – Small business partners

- The Contract : $2.1B, Cost + Award Fee
  - Duration: 5 Yr Base + 5 Yr Option
  - Contract awarded on August 16, 2010
  - Completed transition and initiated execution March 29, 2011
  - Accepted responsibility for all site facilities and infrastructure including security, emergency services, fire and utility operations October 1, 2011

Gaseous Diffusion Plant D&D Scope

Government Furnished Services and Items	• Operate site utilities / infrastructure • Security/Emergency Services/Fire Protection
D&D	• Main process buildings (deactivation/hazard abatement/ equipment removal, demolition) • Balance of the Plant (deactivation and demolition)
On-site Disposal Cell	• Meet DOE and regulatory requirements for selection • Complete design and geotechnical surveys • Construct and operate the disposal site if selected
Regulatory Documents	• Complete Balance of Plant Engineering Evaluation/Cost Analysis • Complete Building / Waste Disposition Records of Decision
Soil Remediation	• Characterize, remediate, and systematically make land available for reindustrialization
Groundwater Remediation	• Complete treatment facility upgrades • Continue pump and treat operations
Facility Surveillance & Maintenance / Operations	• Drive the mortgage cost down by optimizing utilities • Continue operations in X-342, X-344, X-345, X-705
Waste Management	• Disposition of legacy waste, X-847, and Uranium Management Center • Ship X-326 equipment to Nevada National Security Site • Onsite disposal operations if selected

Fluor-B&W | Portsmouth

FY13 Key Decisions & Risks

- Waste Disposition, Onsite vs. Offsite
- Waste Acceptance Criteria
- Final Land Use/Cleanup Levels

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FY13 Planned Activities

- Mortgage Reduction/Streamlining
  - Install Package Boiler/ Deactivate Boiler Plant
  - Install Medium-Voltage Switchyard
  - Initiate Construction of High-Voltage Switchyard
  - Authorize D&D Documented Safety Analysis and Single Set of Consolidated Operating Procedures

- D&D
  - X-326 Process Gas Equipment Removal
  - X-100 Complex D&D

Fluor-B&W | Portsmouth

FY13 Planned Activities

- (D&D Continued)
  - Standup Non-Destruction Analysis Program and Initiate Shipment of X-326 Converters
  - Waste Disposition Option Consideration and Implementation
- Support Activities
  - Transfer UF6 From Thin-Walled to Thick-Walled Cylinders

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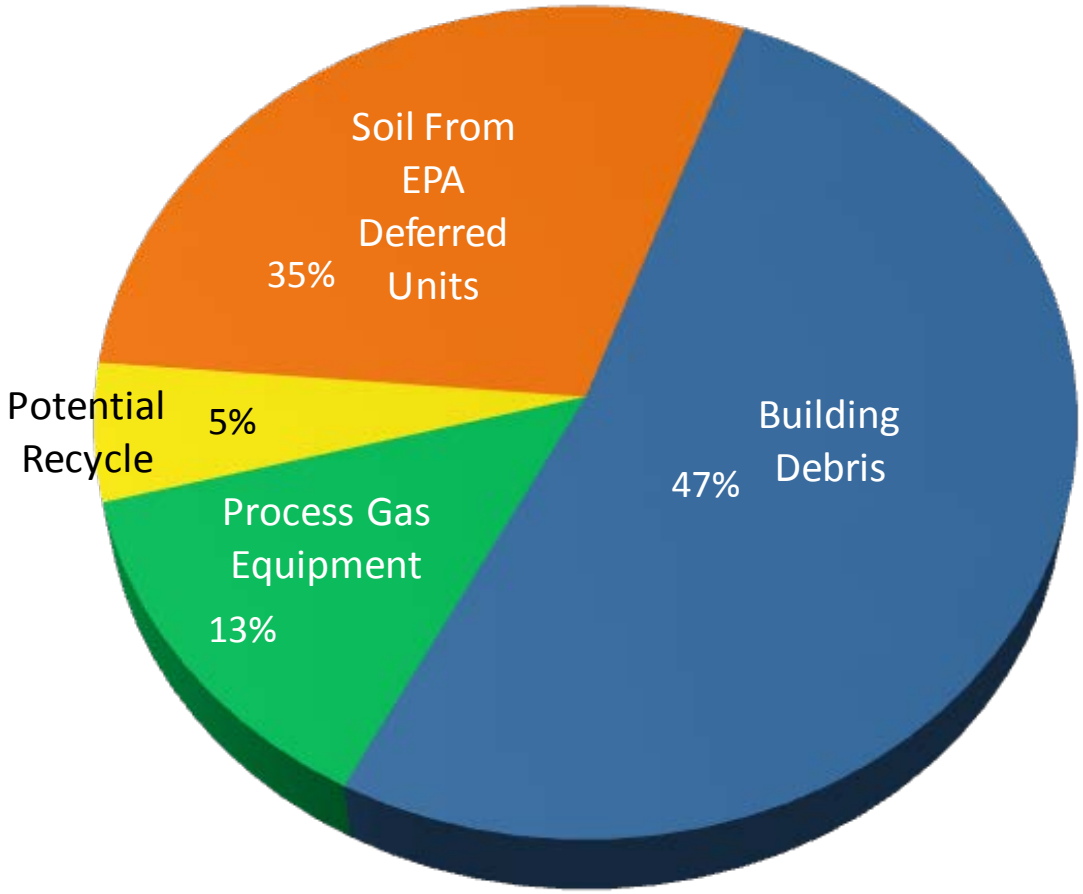
Site-wide Waste Disposition Volumes



Total Volume = 2.177M cubic yards

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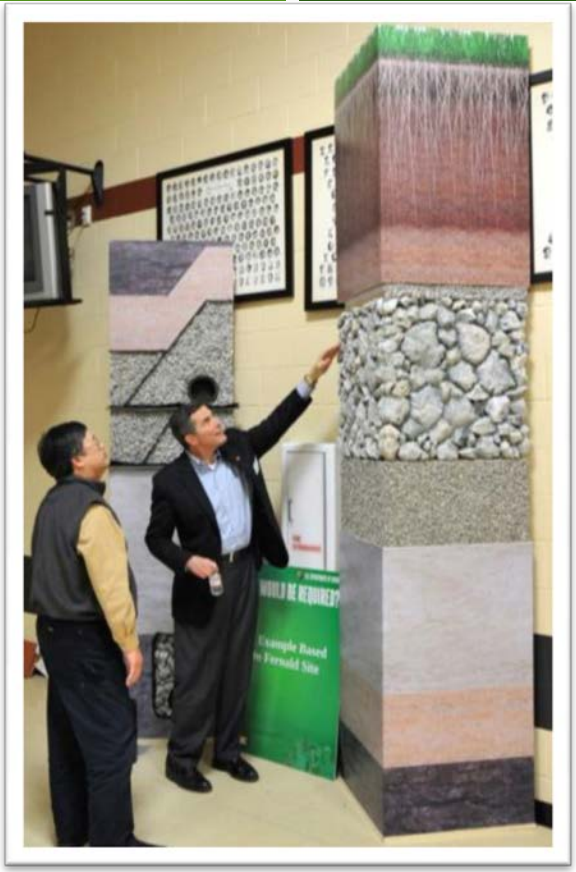
Waste Disposition Alternatives

- Alternative 1:
  - Ship all soils, debris, and equipment to off-site disposal facilities

- Alternative 2:
  - Ship materials with highest contamination off-site
  - Dispose of lower contaminated materials in an engineered on-site disposal facility
  - Require that the on-site disposal facility may only receive Portsmouth waste
  - Ensure permanent care of on-site disposal facility by DOE
  - Additional restrictions or prohibited items may be incorporated into final decision



Conceptual model of the top portion of a disposal cell (as might be constructed on the Portsmouth site). This picture was taken at the Public Meeting held in January 2012.

Comparison of Alternatives

	Off-Site Alternative	On-Site / Off-Site Alternative
Cost	$1.62 Billion	$668 Million
Material Distribution	100% Off-Site	10% Off-Site 90% On-Site
Schedule	18 years	12 years
Transportation Local trucks Trucks to offsite disposal Rail cars	 16,000 local trucks 9,700 trucks 15,000 rail cars	 152,500 local trucks 4,500 trucks 260 rail cars
Truck miles Rail miles	43 million miles 55 million miles	24 million miles 950 thousand miles
Statistical accidents Statistical injuries Statistical fatalities	26 19 2.6	11 8 0.5

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End State Vision

NOW

COMPLETION

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Stakeholder Involvement

Public Engagement

- ✓*Quarterly Public Meetings*
- ✓*SSAB Full Board Meetings*
- ✓*SSAB Subcommittee Meetings*
- ✓*Science Alliance (1,200 students)*
- ✓*Quarterly Meetings with Ohio EPA Director*
- ✓*Monthly Meetings with County Commissioners*
- ✓*Monthly Meetings with SODI Board*
- ✓*Fenceline Neighbors Meetings*
- ✓*Educational Lectures*
- ✓*Weekly Media Updates*
- ✓*Engagement with Elected Officials*

Upcoming Regulatory Decisions

- ✓*Process Building D&D*
- ✓*Waste Disposition*
- ✓*Resource Conservation and Recovery Act Soil Cleanup*

Members of the PORTS Site Specific Advisory Board (SSAB) recently toured the geotechnical sample location and archaeological shovel test site in the potential On Site Disposal Cell Area D study area. Official reports of results upon completion of each activity will be submitted to the Department of Energy and subsequently shared with the SSAB.

Fluor-B&W | Portsmouth

Portsmouth/Paducah Project Office
Piketon, OH and Paducah, KY Sites

March 22, 2012

William E. Murphie
Manager
Portsmouth/Paducah Project Office
PPPO Environmental Management

Paducah Site

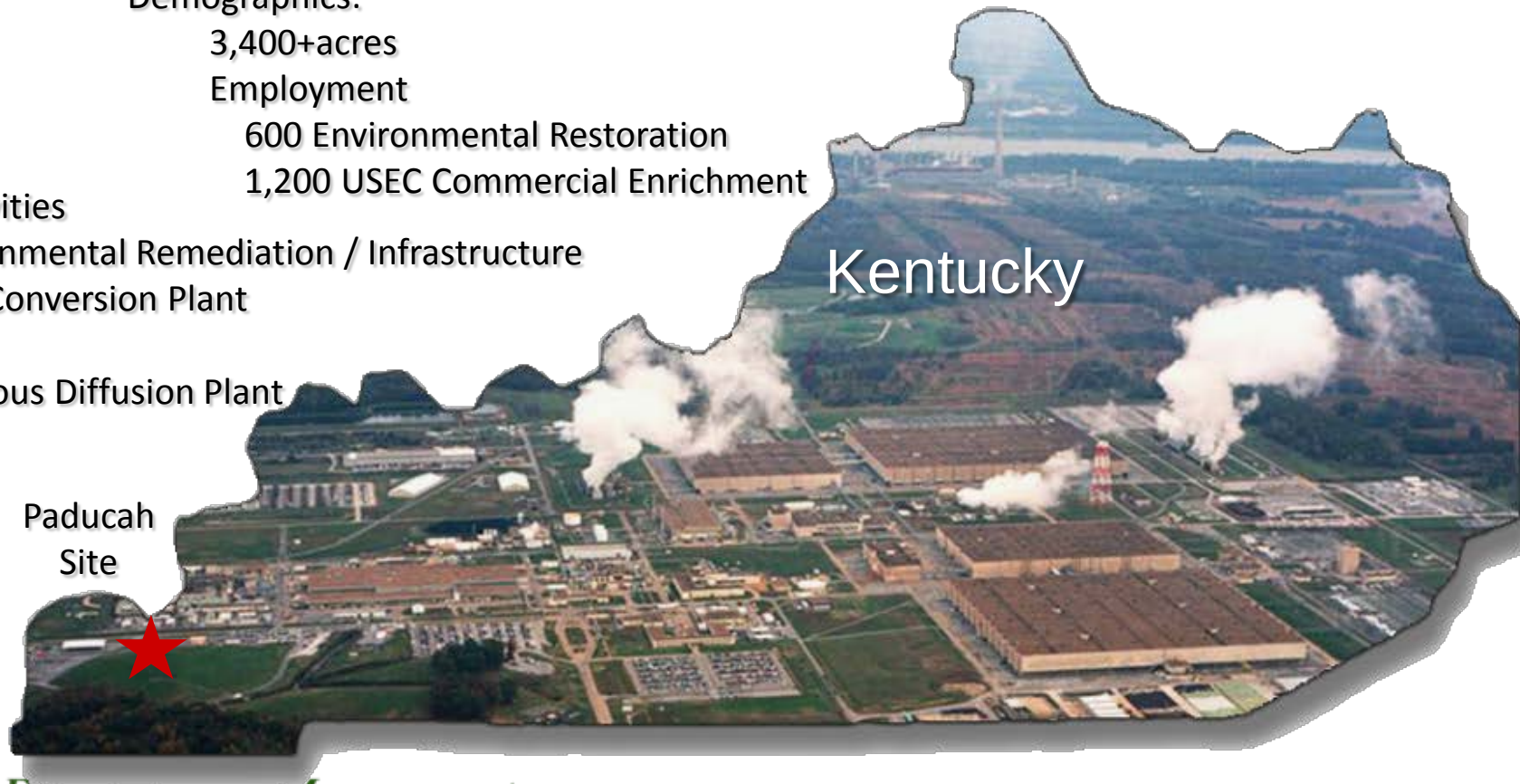
Portsmouth/Paducah Project
Office Vision:

"Safely accelerate cleanup, ensuring protection of the public and environment."

Demographics:
- 3,400+acres
- Employment
  - 600 Environmental Restoration
  - 1,200 USEC Commercial Enrichment

Cleanup Activities
- DOE Environmental Remediation / Infrastructure
- DOE DUF_6 Conversion Plant

Tenant
- USEC Gaseous Diffusion Plant



Funding for Paducah Cleanup

$144.4	$143.1	$142.5
FY2011 Congressional Appropriation In Millions	**FY2012 Congressional Appropriation In Millions**	**FY2013 President's Budget Request In Millions**

FY 2013 Budget for Paducah

FY 2013 President's Budget Request - $142.5M

- Depleted Uranium Hexafluoride Conversion Project - $39.5M
- Nuclear Facility Decontamination and Decommissioning/Environmental Restoration Projects - $90.1M
- Safeguards and Security, Community and Regulatory Support/Other - $12.9M

Nearly 600 Employees FY 13		
LATA Kentucky	Babcock & Wilcox	Swift & Staley
~300	~200	~90

Paducah Cleanup Risk Reduction Priorities

Complete sampling of over 200 acres of soils contaminated with PCBs, uranium, and metals

Removed >22,000 yds^3 of soil in effluent ditches contaminated with PCBs, uranium, and other metals

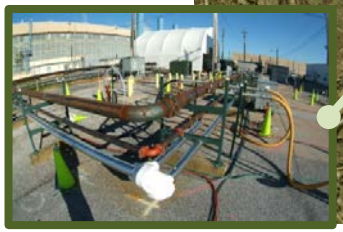
Operate extraction wells to isolate and contain NW groundwater plume within the fence line

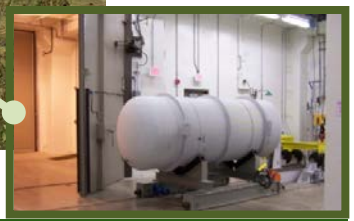
Demolish the abandoned fluorine production portion of the contaminated UF_6 Feed Plant

Complete characterization/ select remedies for historical burial grounds

Completed contaminated vacuum systems and furnace removal; prepare the uranium metal production facilities for demolition

Remove TCE from leading source of groundwater contamination





Convert depleted UF_6 into more stable form

Paducah FY 12 Successes

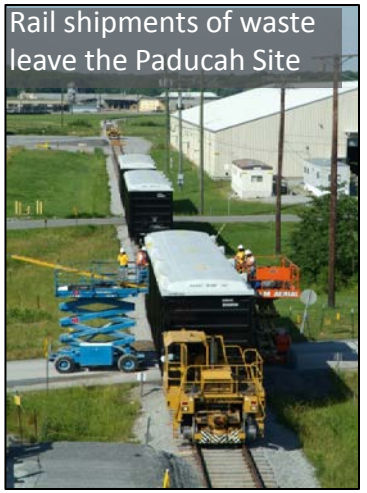
- All three contractors received Governor's Safety and Health Awards in 2012
- Anticipated approval of a Record Of Decision (ROD) for two source areas with TCE-contaminated groundwater known as the SW plume
- ARRA successes: ahead of schedule and under budget
  - o $78.8 million ARRA funding led to demolition of 5 inactive structures with a total footprint of over 57,000 square feet
  - o Deactivation and stabilization activities for two large buildings with a total footprint over 250,000 square feet
- Implementing key groundwater treatment technologies
  - o Enhanced control of off-site plume migration
  - o Commencing treatment of largest on-site contamination sources
- Completed sampling of over 200 acres of soil with over 80 acres accessible to the public

Excavators remove waste from the C-410 Building

Workers in lifts cut the tie line to C-410 while a fork removes the sections

Paducah FY 12 Successes

- Achieved 21 of 21 ARRA milestones realizing $12M in savings
- Identified and implemented more than $8M in cost-saving initiatives to optimize field work
- Shipped over 300,000 cubic feet of the most hazardous waste for off-site disposal
- Shipped neptunium waste (waste stream from Site Treatment Plan), more than 5 years ahead of schedule.



Demolishing the eastern third of the C-410 Feed Plant

Installing electrical resistance heating at the C-400 Cleaning Building

Portsmouth/Paducah Project Office Cleanup Progress
LATA Environmental Services of Kentucky / Paducah, KY

March 22, 2012

Presented by
Mark Duff
Project Manager

Contract Basics

LATA Environmental Services of Kentucky, LLC

LATA Environmental Services of Kentucky–Teaming Partners

Stoller B&W technical services group

The Contract : $299M, Cost + Award Fee

- Duration: 2010-2015
- Contract awarded on April 22, 2010
- Completed transition and initiated execution July 26, 2010

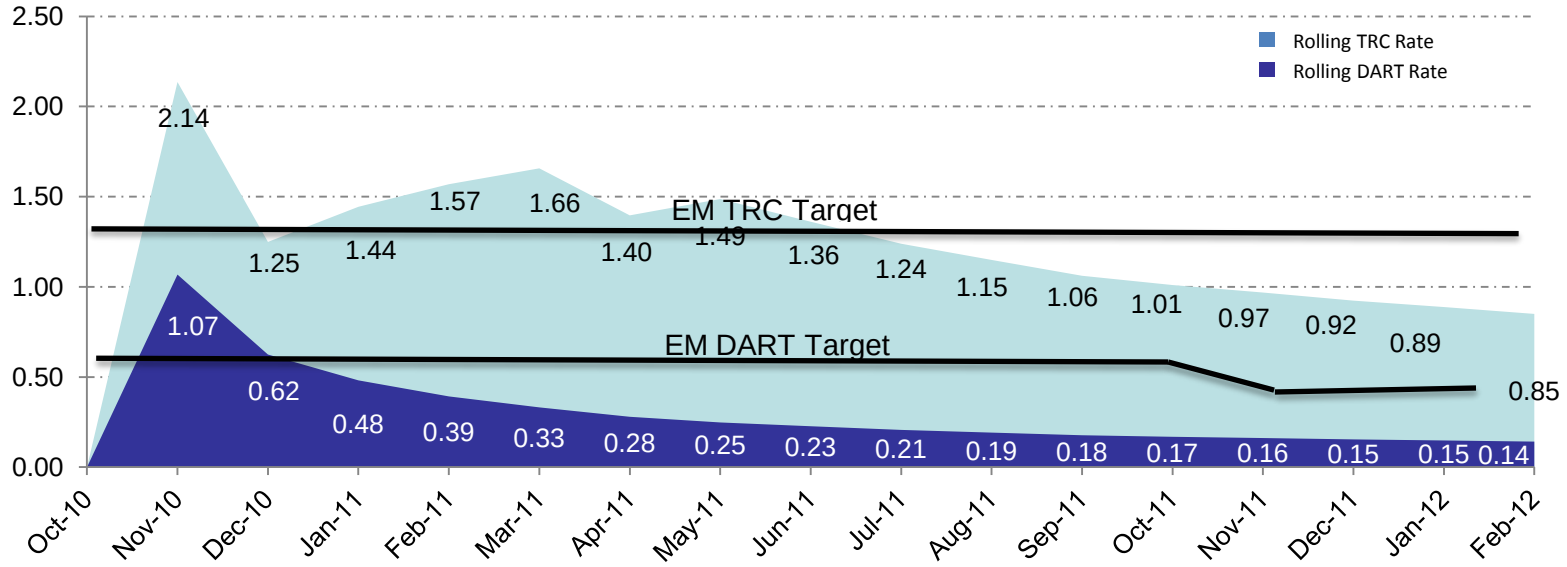
Scope of Work

- Remediate site contamination to reduce risk to workers, public, and environment
- Operate and maintain waste management facilities
- Conduct decontamination and decommissioning activities

Site Achievements–LATA Kentucky Safety

- Completed more than 1 million man hours without a lost work day
- 45% reduction in safety incident reports (82 in FY 2011 vs. 149 in FY 2010)
- Implemented a revised work-control program to encourage worker feedback in procedure development
- 1.25 years since our last Lost Workday Case in November 2010
- 10 months since our last OSHA recordable incident in May 2011

** Statistics are as of end of February 2012*



LATA Environmental Services of Kentucky, LLC

Paducah FY 13 Challenges

Remediation of groundwater contamination

- Largest off-site groundwater plume in the DOE complex
- Depth of plume and nature of sources require innovative technology applications

Burial grounds remediation

- 66 acres of unlined disposal areas
- Highly toxic, mobile nature of waste could require extensive excavation

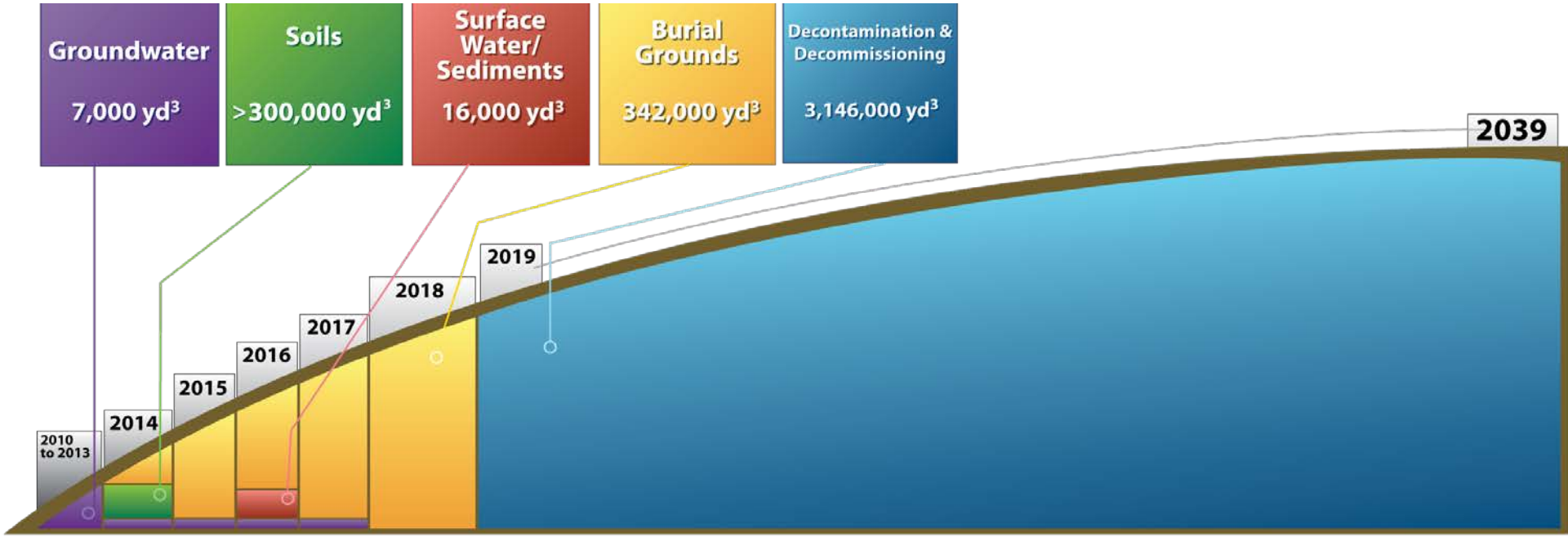
Demolition of inactive facilities

- Uranium (UF_6) deposits react with air to form toxic gas (HF), requiring advanced technologies to stabilize and remove
- High levels of radionuclide, PCB, and asbestos contamination in building systems

Chemical trap work in the C-410 Feed Plant

Paducah FY 13 Challenges

- Cleanup program must be implemented without impact to operating facilities
- Uncertainty of USEC operations could realize significant implications to DOE's current cleanup priorities
- On-site waste disposal is critical to cost-effective cleanup strategy



FY13 Cleanup Goals–Demolition

- Remove PCBs, asbestos siding, and nearly 400,000 cube feet of contaminated building debris for disposal, thereby reducing potential exposure to workers and the environment
- Treat UF_6 and remove 9,000 linear feet of piping and systems highly contaminated with uranium and plutonium
- Demolish and complete waste disposal of the two remaining inactive facilities totaling > 200,000 square feet. This completes scope of the D&D Operable Unit under the Federal Facility Agreement 4 years ahead of the projected schedule.

C-410 Feed Plant after sprayed fixative had been applied

C-340 Metals Plant after sprayed fixative had been applied

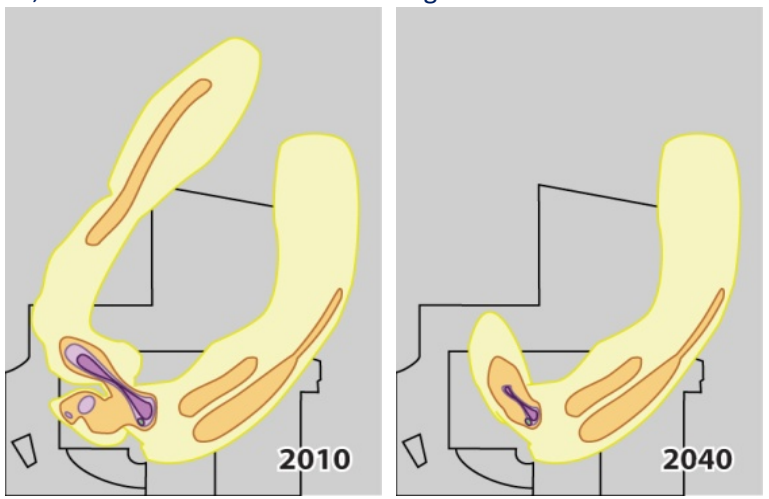
FY13 Cleanup Goals–Groundwater

Primary Objectives

1) Contain and reduce the footprint of contaminated groundwater plumes; nearly 3 billion gallons treated to date

2) Control Migration of off-site Groundwater Contamination
   - Continue operations of NW plume pump-and-treat operations
   - Optimize the NE groundwater plume treatment system, thereby significantly reducing the off-site plume footprint (pumping nearly 150 gallons per minute)

2,100 acres area of contaminated groundwater



C-400 Electrical Resistance Heating Treatment System

FY13 Cleanup Goals - Groundwater

- Begin next phase of removal of up to 7,000 gallons of Trichloroethene (TCE) at C-400, using a combination of innovative technologies:
  - Electrical resistance heating targeting the shallow zones; finish construction and operation in 2013
  - Considering chemical oxidation targeting the deeper zones; start construction in 2013
- Start Deep Soil Mixing to clean up sources of SW groundwater plume


Chemical oxidation to remove TCE at C-400

FY13 Cleanup Goals–Other Projects

Waste Disposition

- Submit Record of Decision (ROD) to regulators for long-term waste disposal
- Begin design of on-site disposal cell if that is the chosen remedy to address the nearly 4 million cubic yards of waste to be generated

Burial Grounds (BG)

- Sign 1st BG Operable Unit ROD to address 4 of 10 unlined BG covering about 66 acres
- Characterize extent of high-risk wastes to support remedy selection at Solid Waste Management Unit (SWMU) 4

Heavy equipment loads waste material into a storage bin

Paducah Community Support

- Paducah Citizens Advisory Board (CAB) is actively engaged with DOE
    - The CAB provided useful input in early 2012 for upcoming public meeting regarding long-term waste-disposal strategies
- DOE aggressively recruited members, and the CAB is fully staffed for the first time since 2003

Paducah Citizens Advisory Board discussion

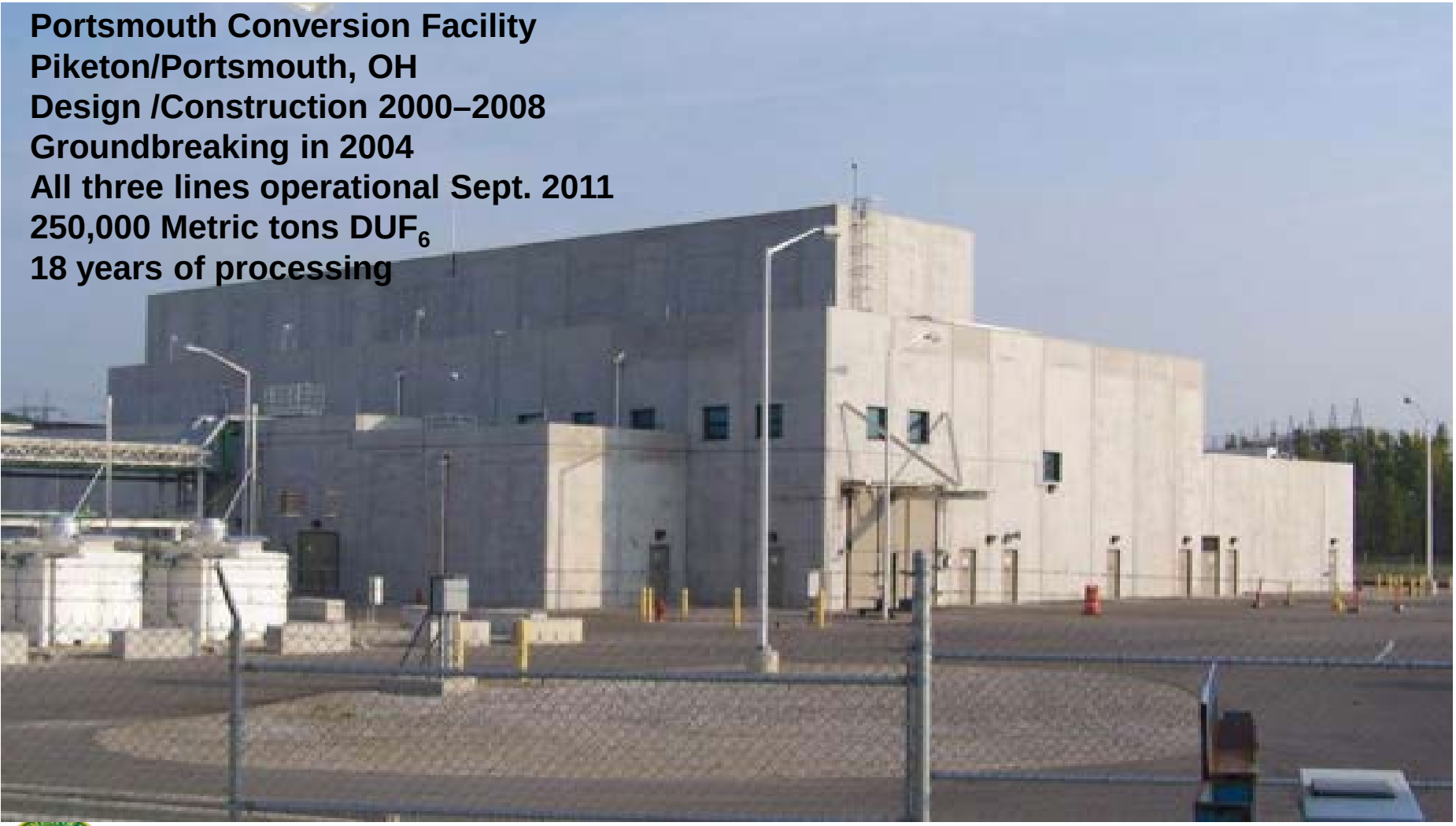
U.S. DEPARTMENT OF ENERGY

Portsmouth/Paducah Project Office
DUF6 Project

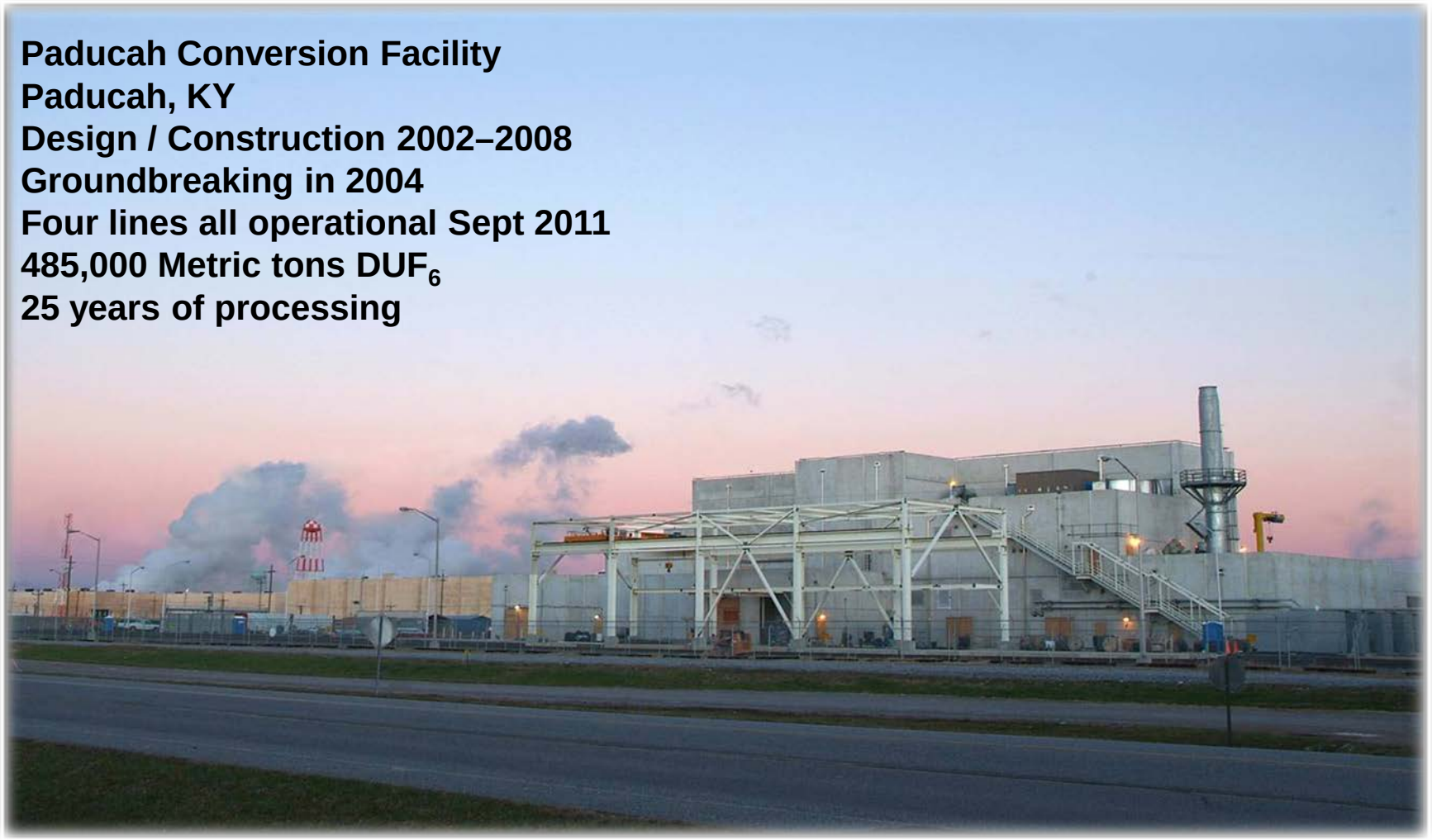
March 22, 2012

William E. Murphie
Manager
Portsmouth/Paducah Project Office

Portsmouth DUF_6 Project



Paducah DUF_6 Project



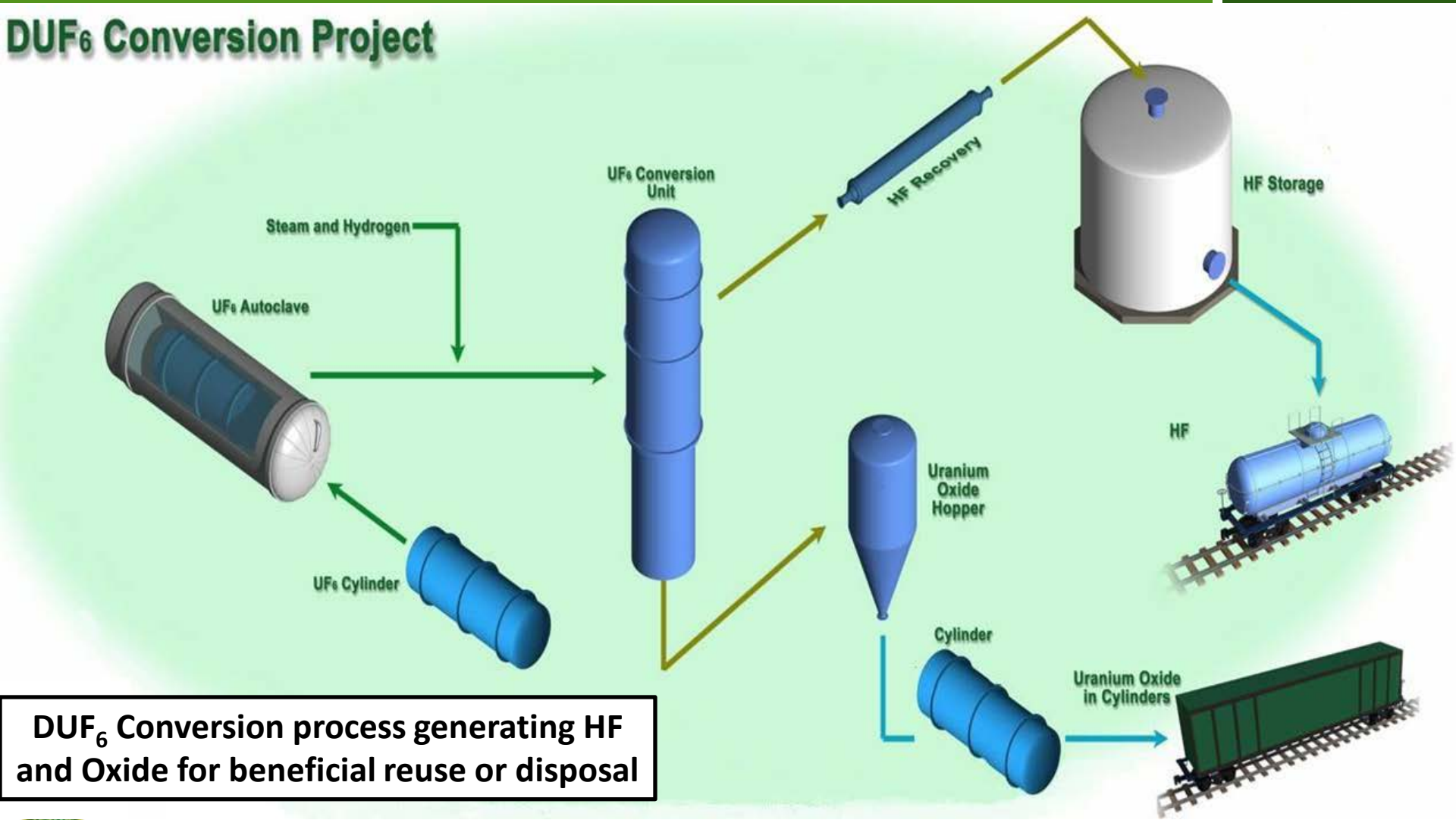
Portsmouth/Paducah DUF_6 Project

Paducah 42,000 cylinders; Portsmouth 21,000 cylinders

About 740,000 metric tons of DUF_6 is in storage under DOE control

DOE Cylinder Yard

DUF_6 Conversion Process



DUF_6 Conversion process generating HF and Oxide for beneficial reuse or disposal

DUF_6 Funding

	FY 11 Appropriations In Millions	FY 12 Current Appropriations In Millions	FY 13 Congressional Request In Millions
Portsmouth DUF_6 Plant	$48.4	$48.1	$49.3
Paducah DUF_6	49.6	$50.9	$39.5
TOTAL	$98.0	$99.0	$88.8

Portsmouth Paducah DUF_6 Project

Inherent challenges:

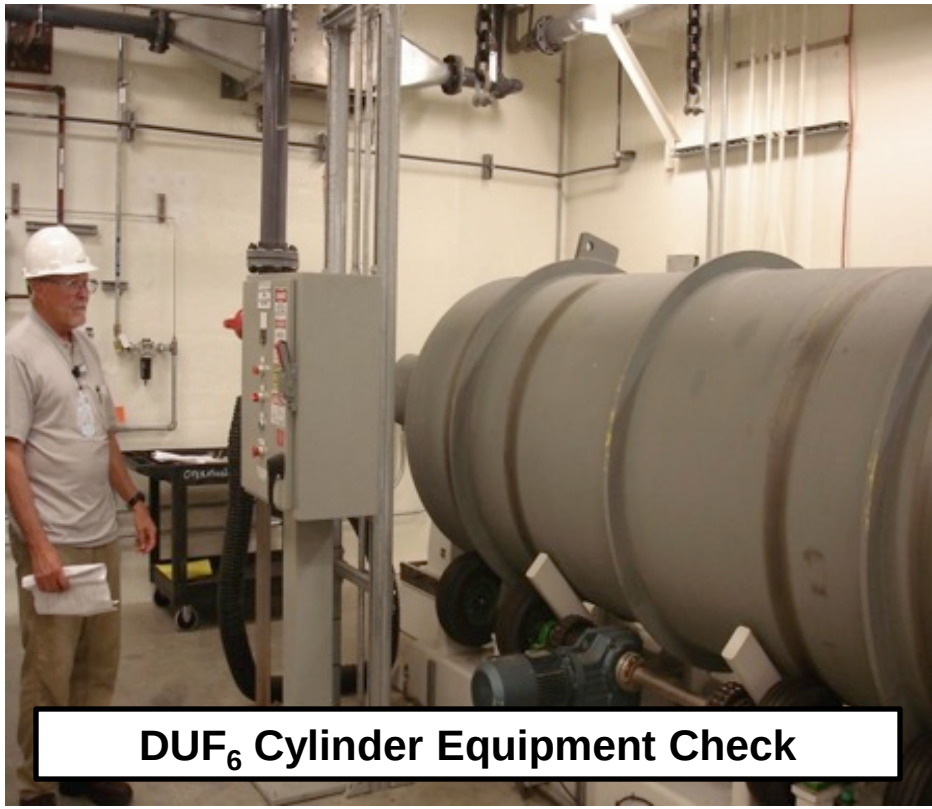
- Workforce trained for testing and conversion operations
- Plants are in phased re-start performing proof of process
- New manufacturing operation/typical startup issues
- Many complex processes to integrate
- No steady state commercial experience
- Bench to production scale
- Integrating two cultures

DUF_6 Autoclaves

Portsmouth Paducah DUF_6 Project

Accomplishments:
All 7 lines at both sites operable
Portsmouth has run 2 of 3 lines simultaneously
Paducah has run 3 of 4 lines simultaneously
Metric Tons of DUF_6 Processed:

Paducah:	1181
Portsmouth:	957
Total:	2138



DUF_6 Cylinder Equipment Check

DUF_6 Cylinder Lift Preparation

Goals FY12/13:
Achieve full design production capability in FY12
Continue process improvements to increase production rates