



U.S. DEPARTMENT OF  
**ENERGY**



# *Environmental Cleanup Update Briefing on the Portsmouth Gaseous Diffusion Plant*

**Joel Bradburne**

**DOE Site Lead**

**Portsmouth/Paducah Project Office**

**Bristol Village Activity Center**

**Waverly, Ohio**

**October 27, 2009**



**EM Environmental Management**

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Agenda

---

- Brief update on environmental cleanup activities
  - Recent project accomplishments and on-going work
  - American Recovery and Reinvestment Act-funded accelerated cleanup projects
  - Depleted Uranium Hexafluoride Conversion Plant status
  - Planning for future Decontamination & Decommissioning of Gaseous Diffusion Plant (GDP)
  - Public involvement opportunities
- Break to information stations for informal discussions



# Portsmouth Gaseous Diffusion Plant



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Environmental Management Program

## ➤ Major Components of Cleanup Program

- Department of Energy (DOE): Environmental Management [including remedial actions, waste disposition, and decontamination and decommissioning (D&D) of the gaseous diffusion plant (GDP)]
- DOE: Depleted Uranium Hexafluoride (DUF6) Conversion Plant

## ➤ Portsmouth Site Demographics

- 3,777 acres
- ~2,100 workers (as of September 2009); Largest employer in rural southern Ohio



*From the early 1950s until production ended in 2001, the Piketon plant enriched uranium for defense purposes and commercial nuclear power plants*



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Recent Cleanup Accomplishments



Demolition of 20,000 sq. ft. Shipping and Receiving Building in late September 2009 marked the 17th inactive facility removed in last 3 years



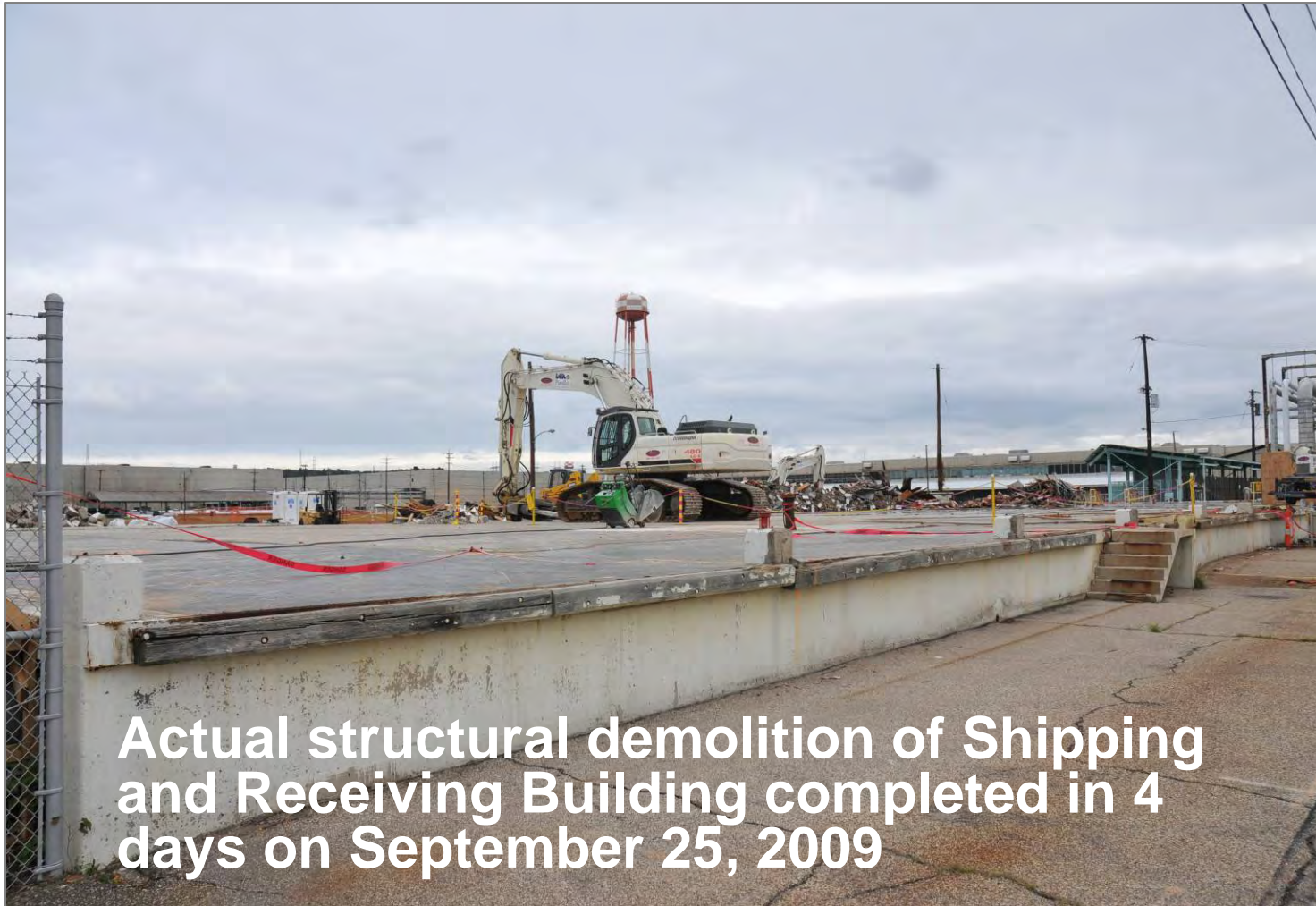
**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Recent Cleanup Accomplishments



Actual structural demolition of Shipping and Receiving Building completed in 4 days on September 25, 2009



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Recent Cleanup Accomplishments

➤ 3,800 cubic meters of low-level and mixed low-level wastes were shipped for disposal in FY 2009, 20% more than Fiscal Year projections



Depleted Uranium Metal Shipment



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Cleanup Progress: On-going Work

- Project initiated in 2009 to remove 324 large items of equipment from DOE Material Storage Areas and ship to Nevada Test Site
- Approximately 21% complete with project completion by end of March 2010



Equipment in DOE Material Storage Areas



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)





# Cleanup Progress: Small Cylinders Phase II Disposition

- Process and disposition 647 small cylinders (containing UF<sub>6</sub> residue)
- USEC has completed processing 83% of 134 cylinders with enough quantities for uranium recovery
- Equipment in place for LATA/Parallax stabilization process; preparing for Readiness Assessment
- Project completion by end of June 2010; waste to be shipped to Nevada Test Site



**Cylinder Stabilization Enclosure**



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Cleanup Progress: High Assay Laboratories Cleanout

- In May 2009, LATA/Parallax began dismantlement and disposal of two unneeded laboratories on-site, the High Assay Isotopic Standards Preparation (HAISP) Lab and High Assay Sampling Area (HASA) in a Category 2 Nuclear Facility
- Completion of both lab cleanouts slated for January 2010



HAISP Lab  
before cleanout



HAISP Lab after initial  
cleanout actions



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

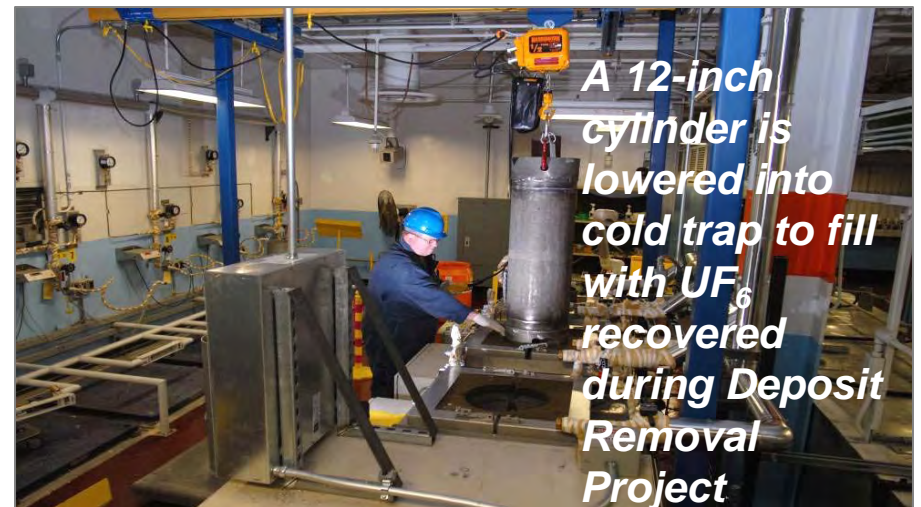
[www.em.doe.gov](http://www.em.doe.gov)



# ***USEC Cold Shutdown (CSD) Activities in Gaseous Diffusion Plant***



- The X-533 Electrical Switchyard (above) was de-energized in November 2008 and returned to DOE in July 2009. Power is now provided through remaining on-site switchyard.
- Uranium deposit removals completed in 2 of 3 process buildings (total of 154 deposits); 230 deposits remaining to be removed.



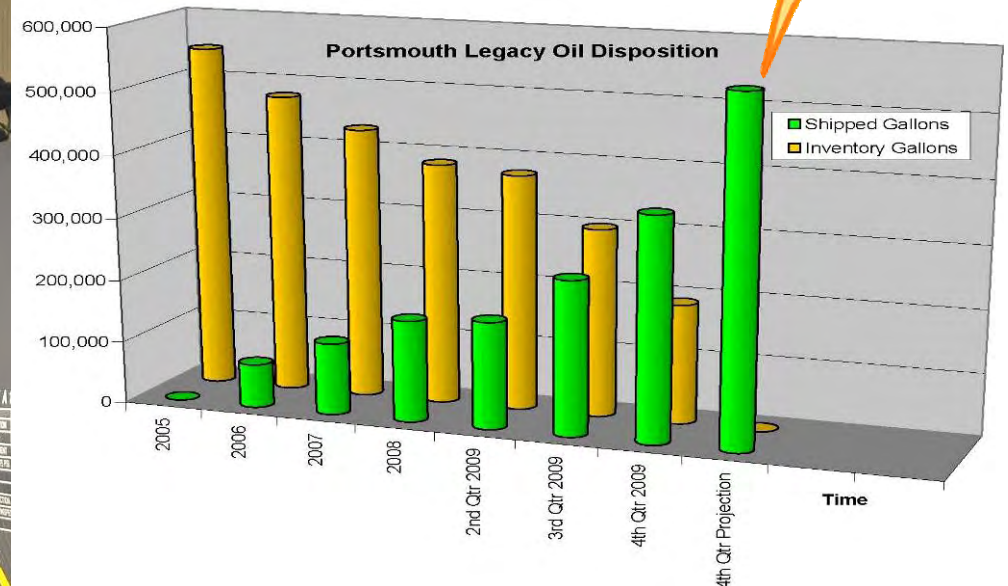
**EM Environmental Management**

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# USEC Cold Shutdown (CSD) Activities



- USEC has completed removal of 5.7M lbs. of lubricating oils and transformer oils (totaling 576,000 gallons) from the gaseous diffusion plant; includes 4.1M lbs. removed in 2009
- Oils were shipped via 22 rail cars and 47 tanker trucks to off-site commercial incinerator



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure



# American Recovery and Reinvestment Act (ARRA)



## Putting Americans Back to Work

***The Piketon Plant is receiving \$118.2M in Stimulus funding under ARRA for five accelerated cleanup projects. A total of 249 jobs have been saved/created through September 2009. Another 145 are to be added between now and September 2011.***



**EM Environmental Management**

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)

# Projects funded under American Recovery and Reinvestment Act (ARRA)



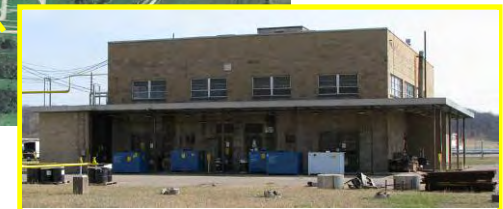
**X-701B  
Groundwater  
Plume Source  
Removal Project**



**D&D of the X-633  
Recirculating  
Cooling Tower  
Complex**



**Repackaging  
& Disposition  
of Excess  
Uranium  
Materials**



**D&D of the X-760 Chemical  
Engineering Building**



**D&D of the X-533  
Electrical  
Switchyard Complex**



**D&D = Decontamination and Decommissioning**

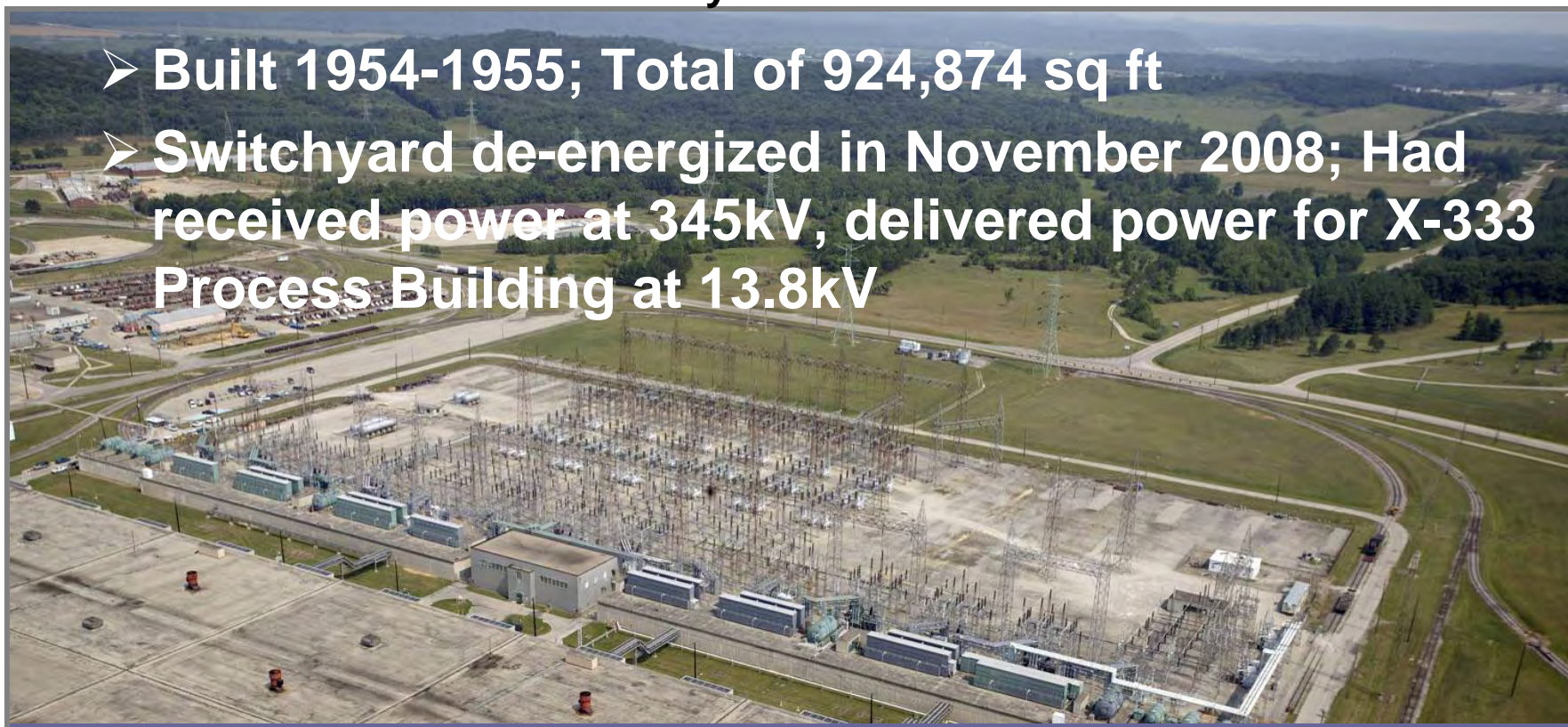


# ARRA Accelerated Cleanup Project



Decontamination and Decommissioning (D&D) of X-533 Electrical Switchyard

- Built 1954-1955; Total of 924,874 sq ft
- Switchyard de-energized in November 2008; Had received power at 345kV, delivered power for X-333 Process Building at 13.8kV



*Project Accelerated for June 2010 Completion*



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# ARRA Accelerated Cleanup Project



## Decontamination and Decommissioning (D&D) of X-633 Recirculating Cooling Tower Complex



- Majority of complex built in 1955; operated until 2008
- Includes 4 Cooling Towers (58 cells), and Pump House over 18-acre area
- Engineering Evaluation/Cost Analysis in Public Review thru October 30, 2009

***Project Accelerated for June 2010 Completion***



**EM Environmental Management**

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)

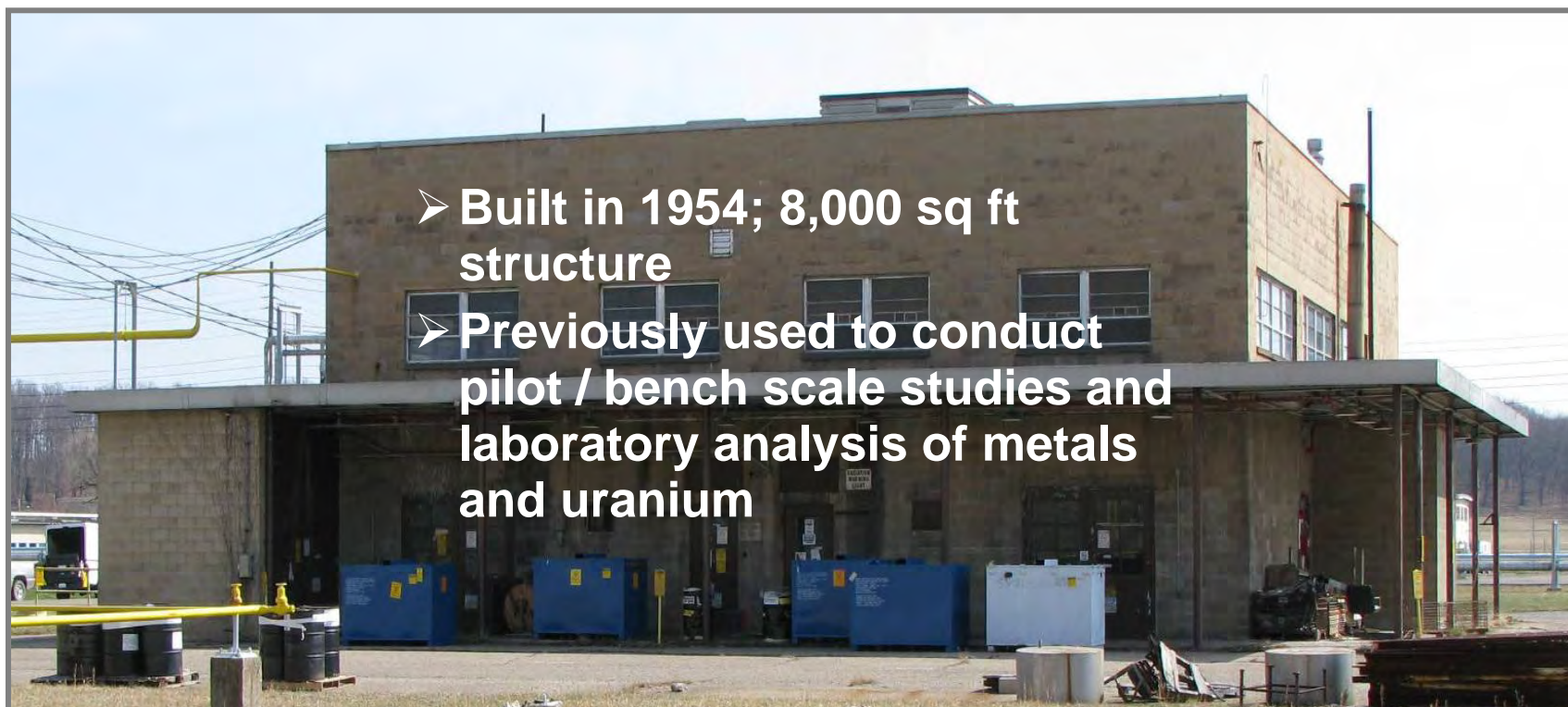




# ARRA Accelerated Cleanup Project



Decontamination and Decommissioning (D&D) of X-760  
Chemical Engineering Building



- Built in 1954; 8,000 sq ft structure
- Previously used to conduct pilot / bench scale studies and laboratory analysis of metals and uranium

*Project Accelerated for June 2010 Completion*



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# ARRA Accelerated Cleanup Project

- Accelerating repackaging, disposition of 1,250 metric tons of surplus uranium to Nevada Test Site
- Materials in interim storage since 1999-2002; consolidated from Fernald and Hanford Sites
- More than 800 truck shipments required for project completion by June 2010



Surplus uranium in Interim storage



First accelerated shipment of surplus uranium materials completed September 21, 2009



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

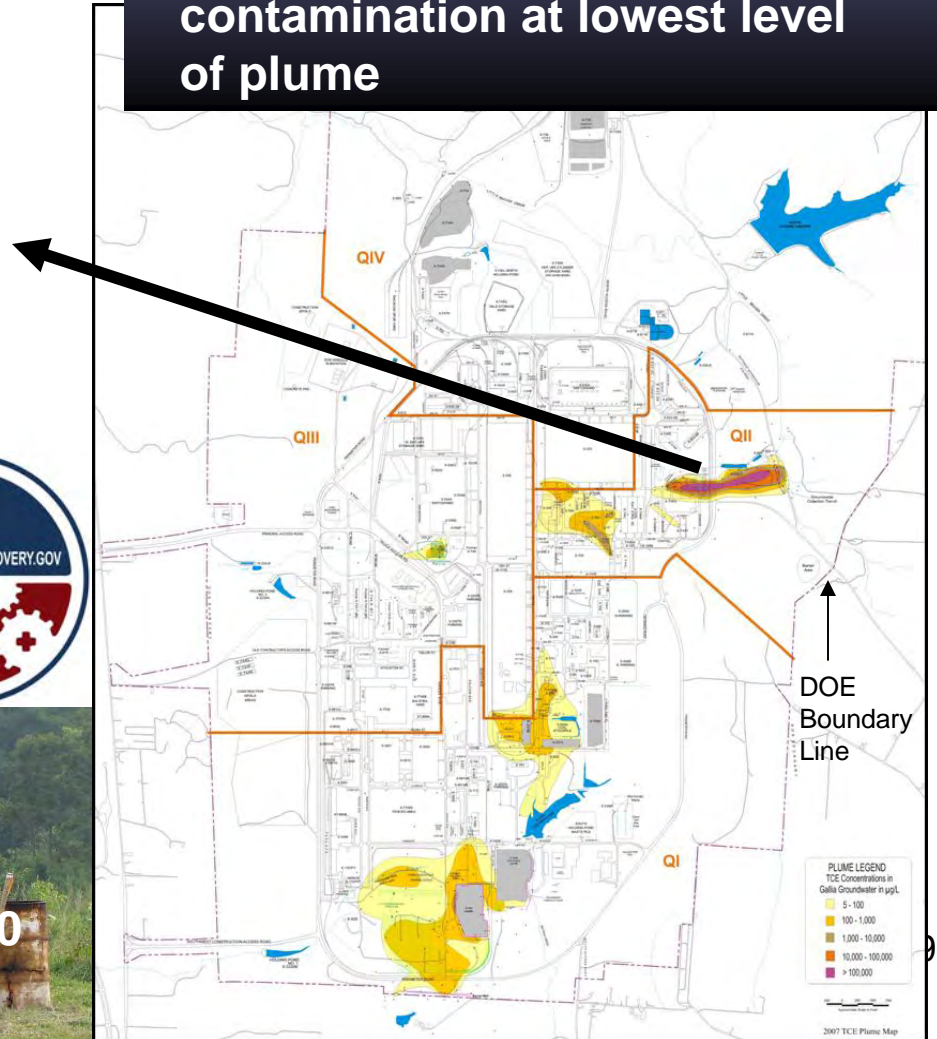
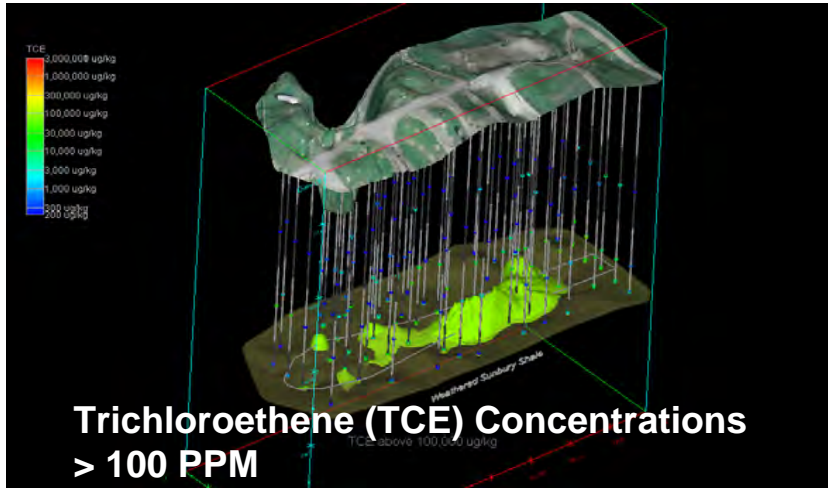
[www.em.doe.gov](http://www.em.doe.gov)



# ARRA Accelerated Cleanup Project

## X-701B Groundwater Source Remediation – Interim Measure

- Address source area with highest TCE concentrations on-site
- Excavate contaminated soils, mix with oxidant to treat contamination at lowest level of plume





# D&D Planning at Piketon Plant

- DOE issued Request for Proposals (RFP) for D&D Project in June 2009
- Project involves removal of facility contents, demolition of approximately 10M square feet of space, and disposition of waste
- RFP Funding Profile: \$250M-\$325M/Yr Range



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



## ***D&D Planning at Piketon Plant***

- **DOE is expanding and accelerating cleanup efforts at the Portsmouth Site for the D&D Project**
  - Increase the funding profile assumption by additional \$150-200M annually for the first three years of the period of D&D contractor performance
  - Create 800 to 1000 new jobs
  - Fund accelerated cleanup in the D&D Contract through a barter of excess uranium assets on a periodic basis
  - D&D Project proposals currently due by November 13, 2009



**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Partnering with the Southern Ohio Community

- DOE has signed an Asset Transition Agreement for Economic Development with Community Reuse Organization [Southern Ohio Diversification Initiative (SODI)] for potential reuse of excess equipment and materials
- DOE and its contractors are working closely with the Site Specific Advisory Board – recently completed its first year



4 Excess Rail Cars at Portsmouth Site Donated August 2009 to SODI for Reuse



DOE, Contractors, and SODI officials with 1st Rail Car for Shipment



Rail Car Provided for Reuse as Bridge on Moonville Rail Trail in Southeast Ohio



**EM** Environmental Management

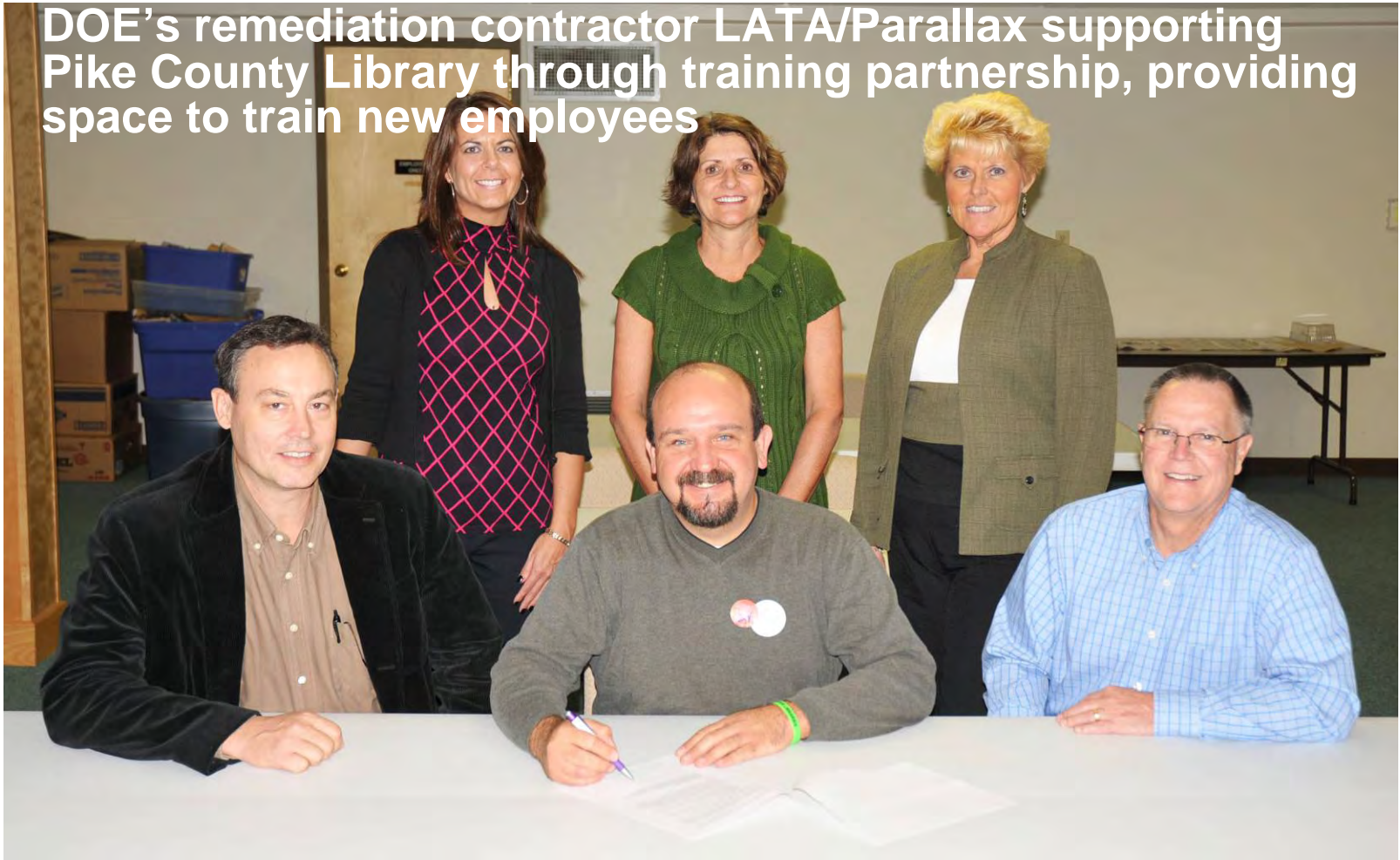
safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Partnering with the Southern Ohio Community

DOE's remediation contractor LATA/Parallax supporting Pike County Library through training partnership, providing space to train new employees



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Depleted Uranium Hexafluoride ( $DUF_6$ ) Conversion Plants Status

- Two plants built in Paducah, KY and Portsmouth, OH to convert the Department of Energy's inventory of ~700,000 metric tons of  $DUF_6$  into a more stable form for disposition
- Project has completed 3.3M cumulative manhours without a lost time accident; over 650,000 hours worked since November 2008



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)





# Portsmouth $DUF_6$ Conversion Plant



## ➤ Construction Complete

- Portsmouth Physical Construction completed in May 2008



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



# Portsmouth $DUF_6$ Conversion Plant



- **Portsmouth Integrated System Testing (IST) completed on schedule**
  - IST completed on August 18, 2009
  - Readiness Assessment Phase started at Portsmouth
  - Management Self-Assessment commenced September 21, 2009



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure



# Portsmouth DUF<sub>6</sub> Conversion Plant

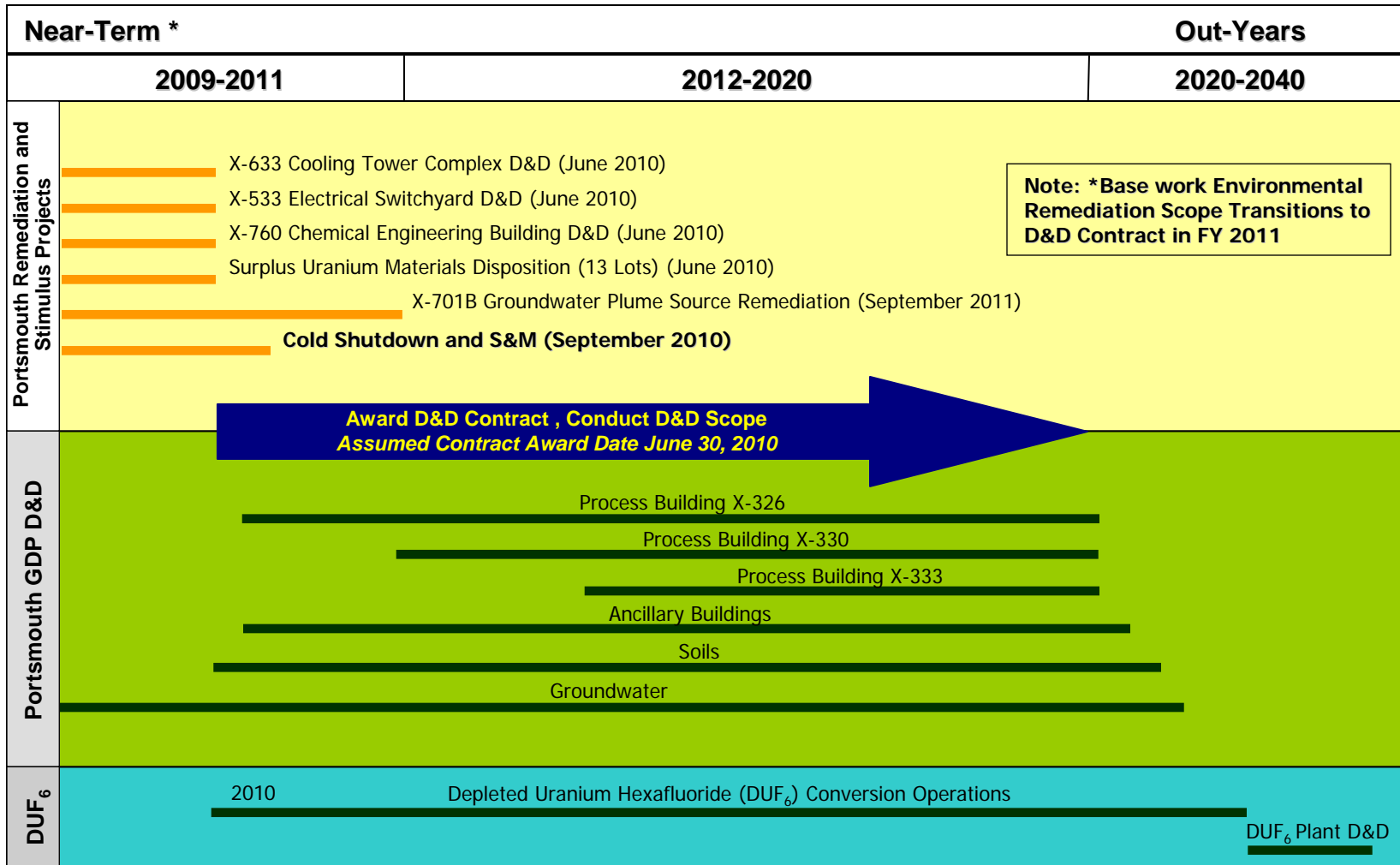
---

- **Safety Evaluation Reports (SERs) Received for Portsmouth Conversion Facility and Cylinder Storage Yards Documented Safety Analysis/Technical Safety Requirements (DSA/TSRs)**
  - No Conditions of Approval
  
- **Accelerating Start-up**
  - Portsmouth baseline startup date is October 24, 2010
  - Portsmouth accelerated startup milestone is March 4, 2010





# Upcoming Work at Portsmouth



Note: \*Base work Environmental Remediation Scope Transitions to D&D Contract in FY 2011



**EM Environmental Management**

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



## ***Near-Future Goals for the Portsmouth Site***

- Accelerate overall environmental cleanup
- Award D&D Contract - 3rd Qtr FY 2010
- Continue Public Outreach: Determine waste disposition for D&D materials; onsite/offsite
- Continue to support stabilization of workforce



**Public Meetings Held to Obtain Input from Stakeholders**



**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



## ***Upcoming Public Involvement***

---

- **30-day public comment period through October 30, 2009 on X-633 Cooling Tower Complex EE/CA document**
- **X-533 Switchyard EE/CA scheduled to be issued for 30-day public comment period within next two weeks**
- **X-760 Chemical Engineering Building EE/CA document will be issued for 30-day public comment period shortly thereafter**
- **SSAB public meetings held first Thursday every other month; next meeting November 5, 2009**
- **Next cleanup update meeting in 1<sup>st</sup> quarter 2010**



**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)



## ***Information Resources***

---

- U.S. Department of Energy: [www.energy.gov](http://www.energy.gov)
- U.S. Department of Energy's Portsmouth/Paducah Project Office: [www.pppo.energy.gov](http://www.pppo.energy.gov)
- DOE's Consolidated Business Center: [www.emcbc.doe.gov](http://www.emcbc.doe.gov)
- LATA/Parallax Portsmouth: [www.lpports.com](http://www.lpports.com)
- PORTS Site Specific Advisory Board: [www.ports-ssab.org](http://www.ports-ssab.org)
- Theta/Pro2Serve Management Company: [www.tpmcllc.com](http://www.tpmcllc.com)
- United States Enrichment Corporation: [www.usec.com](http://www.usec.com)
- Uranium Disposition Services: [www.uds-llc.com](http://www.uds-llc.com)

***For Additional Information, Contact the Public Affairs Office at (740) 897-2336***



**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)

---

# ***Public Input from Last Public Meeting on May 28, 2009***



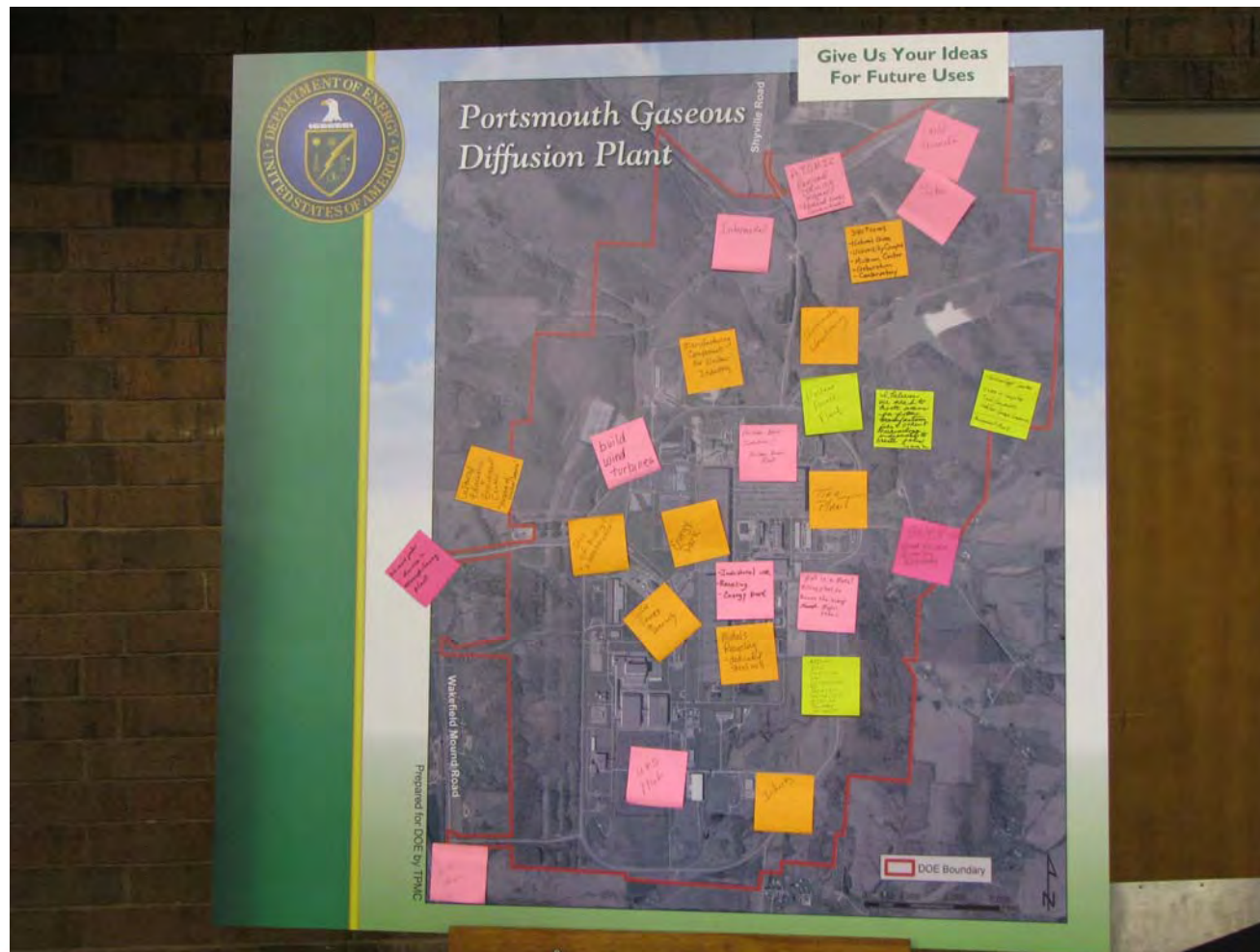
***EM Environmental Management***

*safety ❖ performance ❖ cleanup ❖ closure*

[www.em.doe.gov](http://www.em.doe.gov)



# Future Use Poster – Suggestions from Public



**EM** Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

# Future Use Suggestions

**Note: The following are future use ideas provided on the Future Use Station's site map by attendees at the May 28, 2009 DOE Public Open House/Information Exchange**

- Give sewage (plant) to community
- Nuclear storage
- We need jobs – develop a manufacturing plant
- Cultural Education and Enrichment Center; 'Museum of Nuclear Legacy'
- UPS Hub
- Industry
- Modify DOE position on recycling to permit controlled recycling of valuable resources
- Metals recycling – dedicated steel mill
- Put in a metal melting plant to reuse the scrap metal and steel
- Industrial use; recycling; Energy Park
- GNEP Global Nuclear Energy Partnership
- Technology Center - Lure in computer tech companies and/or game companies; Amusement Park
- I believe we need to create areas for future manufacturing jobs and other technology endeavors to create jobs



**EM Environmental Management**

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)

# Future Use Suggestions

**Note: The following are future use ideas provided on the Future Use Station's site map by attendees at the May 28, 2009 DOE Public Open House/Information Exchange**

- Tire plant
- Use of building `Warehouses`
- Build wind turbines
- Nuclear base industries/nuclear power plant
- Nuclear power plant
- Manufacturing components for nuclear industry
- Intermodal warehousing
- Training Center & welcome
- Intermodal
- A.T.O.M.I.C. Regional Training Program `Advanced Energy Curriculum`
- Jobs
- 340 acres
  - Natural area
  - University campus
  - Museum center
  - Arboretum
  - Conservatory
- Land transfer



**EM Environmental Management**

safety ❖ performance ❖ cleanup ❖ closure

[www.em.doe.gov](http://www.em.doe.gov)