



February 24 – February 28, 2013 ♦ Phoenix, Arizona

Portsmouth Paducah Project Office – 2020 Vision

**William Murphie
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SESSION 16

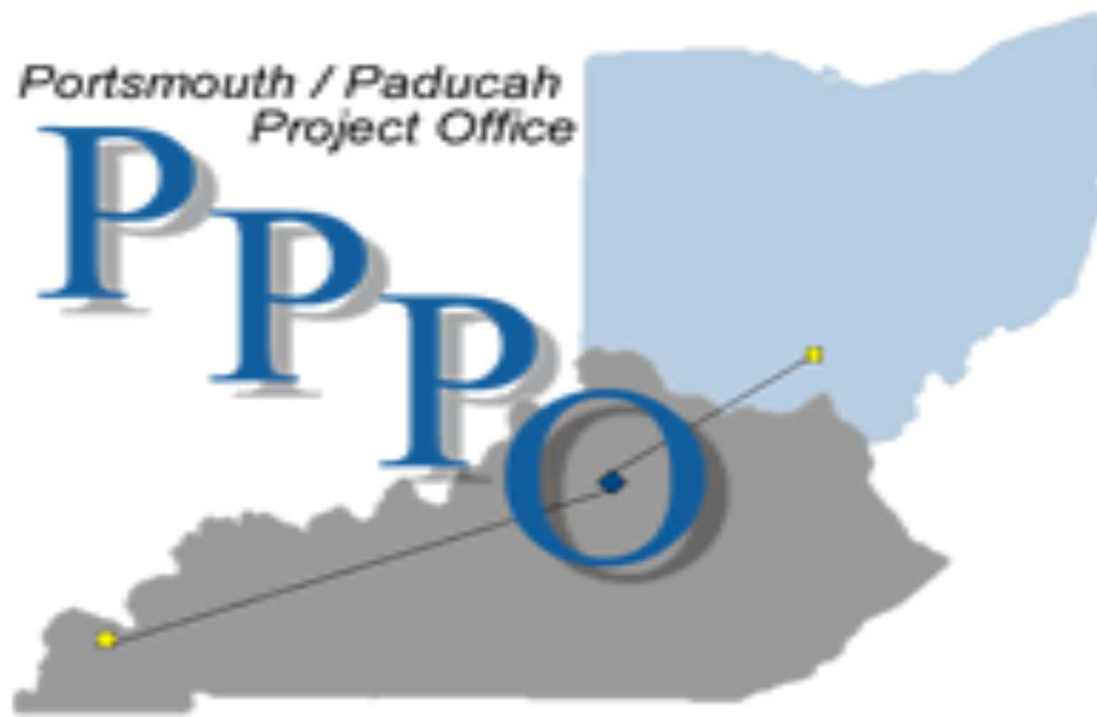
Portsmouth Paducah Project Office 2020



WASTE MANAGEMENT SYMPOSIA
Phoenix, Arizona

MONDAY, FEBRUARY 25, 2013

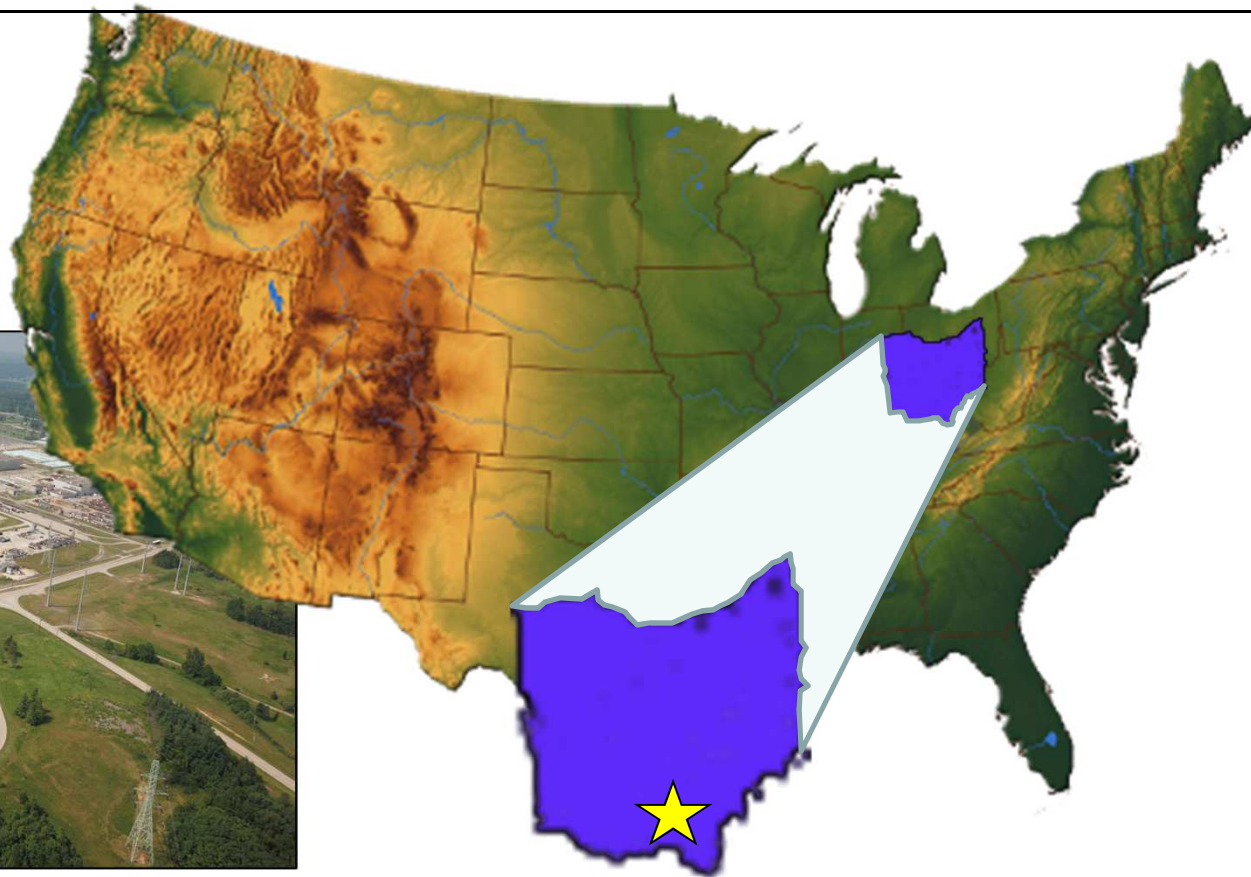




*Portsmouth / Paducah
Project Office*

3 Major projects managed from Lexington KY

1. Portsmouth Gaseous Diffusion plant
2. Paducah Gaseous Diffusion Plant
3. Depleted Uranium Hexafluoride Processing



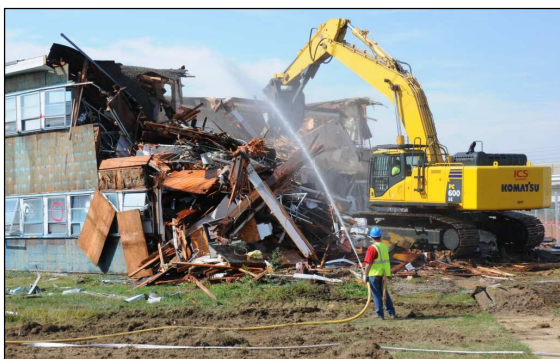
QUICK FACTS

- 3,700+ acre federal site
- Shared site with ACP, and operating DUF_6 conversion facility
- 2,900+ jobs for southern Ohio



PORTSMOUTH CURRENT CONDITIONS

D&D



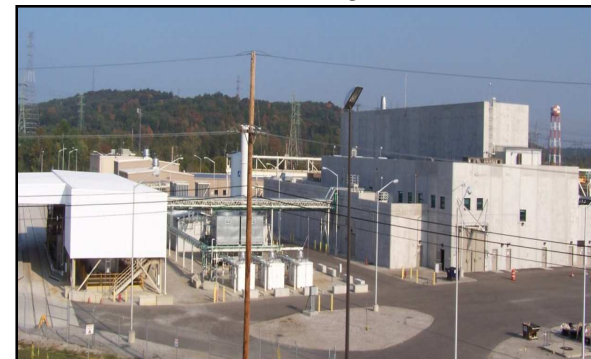
- Fluor-B&W Portsmouth (FBP) awarded D&D contract in August 2010
- FBP began D&D operations in March 2011
- Regulatory decisions related to D&D and waste disposition expected in near term
- Estimated D&D conclusion is 2033

ACP



- Since 2002, USEC has had intentions to bring the American Centrifuge Plant into full scale operation
- USEC is pursuing a \$2 billion loan guarantee under the DOE program
- ACP's capacity would be equal to about one-third of the fuel requirements for U.S. commercial reactors

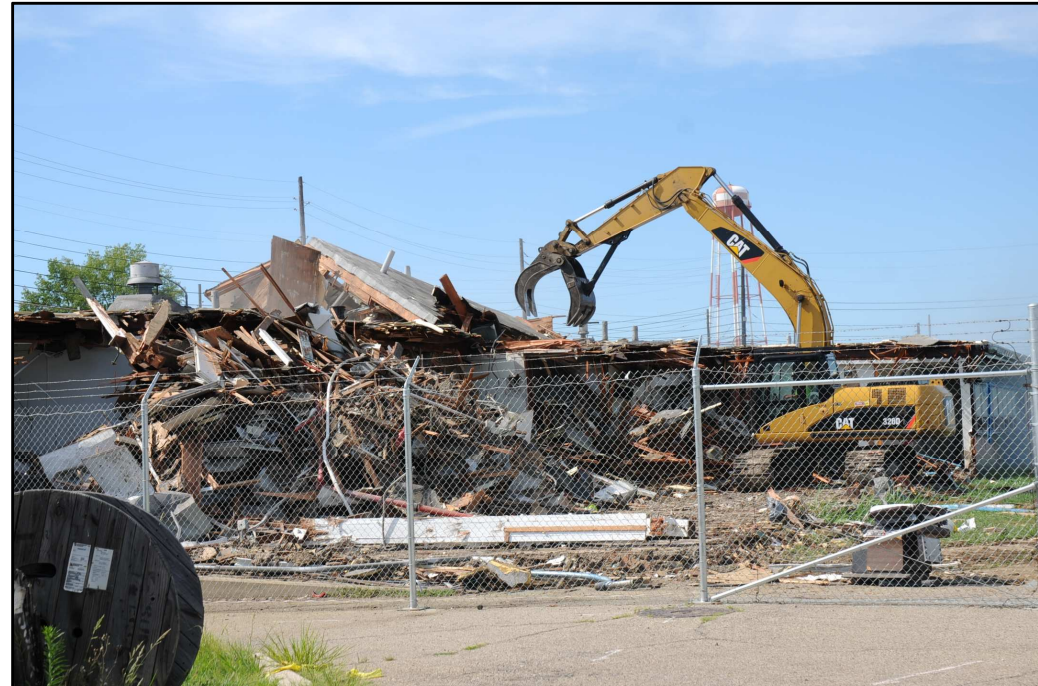
DUF₆



- B&W Conversion Services awarded DUF₆ contract in 2010 to operate facility
- Products of conversion process are uranium oxide, a more stable waste produce, and hydrofluoric acid, which has commercial value
- DUF₆ operations estimated to go through 2030

PORTSMOUTH D&D SCOPE OF WORK

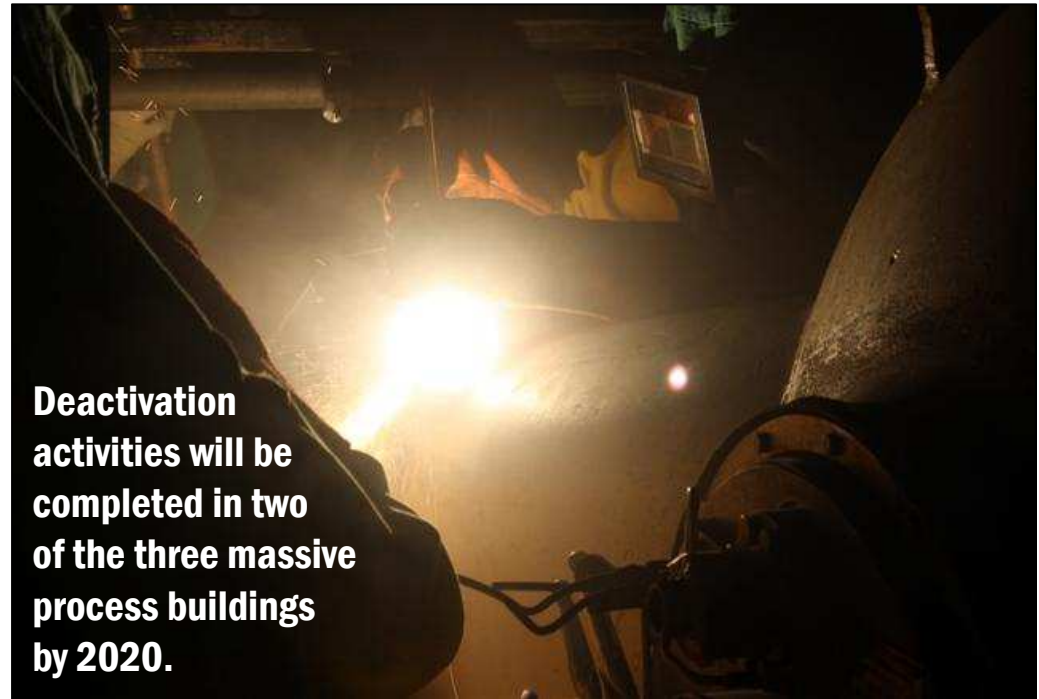
- Dismantling and disposal of Gaseous Diffusion Plant facilities
 - 3 large process facilities
 - Other ancillary GDP support facilities
- Clean up contaminated soil
- Ensure effective groundwater remediation
- Assess existing closed/capped landfills
- Leave site in a condition that supports community's vision





PORTSMOUTH PROJECT ASSUMPTIONS

- By 2020, significant progress will be made on the D&D project, including:
 - Regulatory decisions related to D&D, waste disposition and cleanup levels will be made
 - Deactivation will be completed for two of the three massive process buildings (X-326 & X-333)
 - Deactivation will be under way for the final massive process building (X-330)
 - If on-site disposal is chosen as a waste disposition alternative, the following will have occurred:
 - Completion of On-Site Disposal Cell infrastructure
 - Beginning of placement of D&D waste
- All project milestones are made with the assumption of flat funding at current levels



Deactivation activities will be completed in two of the three massive process buildings by 2020.



PORTSMOUTH FUTURE USE SCENARIOS

- Ohio University's Voinovich School of Leadership and Public Affairs performed an exhaustive survey (PORTSFuture) that pulsed citizens on preferred future uses at the site.
- The survey's findings indicated the public's top choices for reuse:
 - Nuclear power plant
 - Green energy production
 - Industrial park
 - National research & development
 - Transportation
 - Training & education
 - Metals recovery



PUBLIC OUTREACH

- Outreach efforts include:
 - Ohio University grant
 - Quarterly meetings
 - Public tours
 - Envoy Program
 - Fenceline Neighbors meetings
 - Civic involvement
 - Elected officials briefings
 - Portsmouth SSAB
 - ASER high school participation
- Broader DOE visibility through outreach efforts that go beyond regulatory requirements has created dialogue with community that has been beneficial to DOE and the community





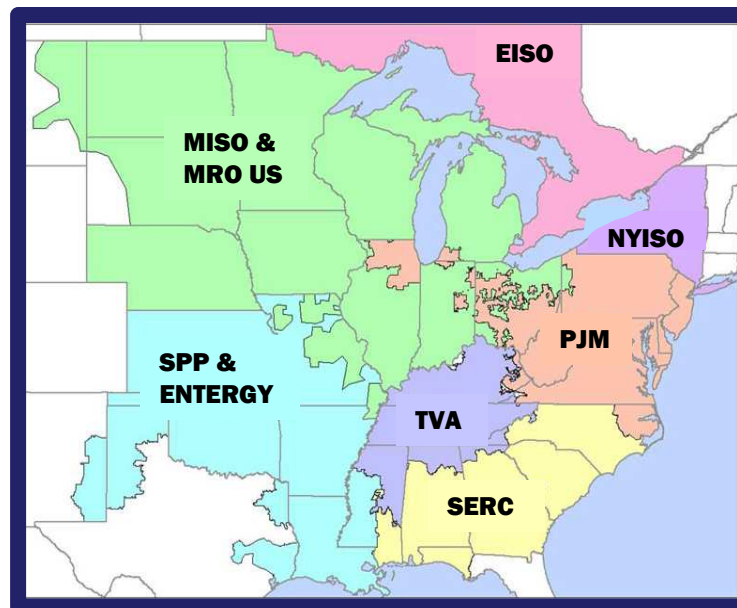
DOE-SODI ASSET TRANSITION PROGRAM

- Best in Class EM Sustainability Award winner
- Generated more than \$4.4M, 300+ anticipated regional jobs
 - SODI has delivered \$600,000 in grants to four surrounding counties, including:
 - \$150,000 to a Scioto County industrial park upgrade project
 - \$150,000 to Pike County for a \$2.7M sewer expansion project
 - \$150,000 to Jackson County for an airport upgrade project
 - \$150,000 to Ross County for an industrial park upgrade project
- Other recycling/reindustrialization accomplishments
 - Well site to Village of Piketon
 - Transferred 1.8M+ pounds of excess personal property, 100 vehicles
 - Pike County tie-in to site sewage plant
- Efforts to establish recycling/reindustrialization program
 - Sitewide EA to expedite future real property transfers
 - Suspension & Moratorium
 - Recycling IPT, Cost Benefit Analysis



2020 AND BEYOND

- Key milestones after 2020 at Portsmouth include:
 - Demolition of all three major process buildings by 2027
 - Demolition of all Balance of Plant facilities by 2032
 - Final waste placement in On-Site Disposal Cell by 2032
 - Project completed in 2033
- The establishment of a clearly defined future use at Portsmouth will clarify the actions and the sequence of D&D activities
- The existing assets at Portsmouth and the community's support for reindustrialization are key barometers for determining potential future use.
- The site's access to the national power grid is a critical attribute, among others.
 - Five independent access points
 - Potential for 10 access points
 - On-site connection to AEP 765kv high voltage backbone is available



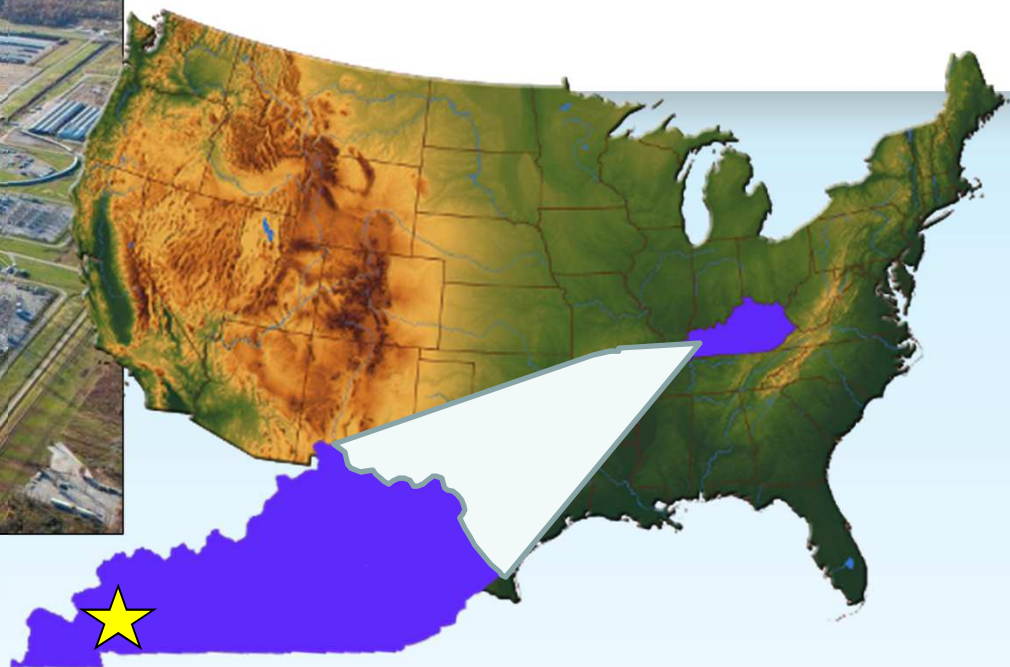
The Portsmouth site is connected to two Balancing Authority areas and to two Reliability Coordination areas (PJM and MISO)

END STATE POSSIBILITIES

**Portsmouth Current Site
2012**



**Potential End State
2033**



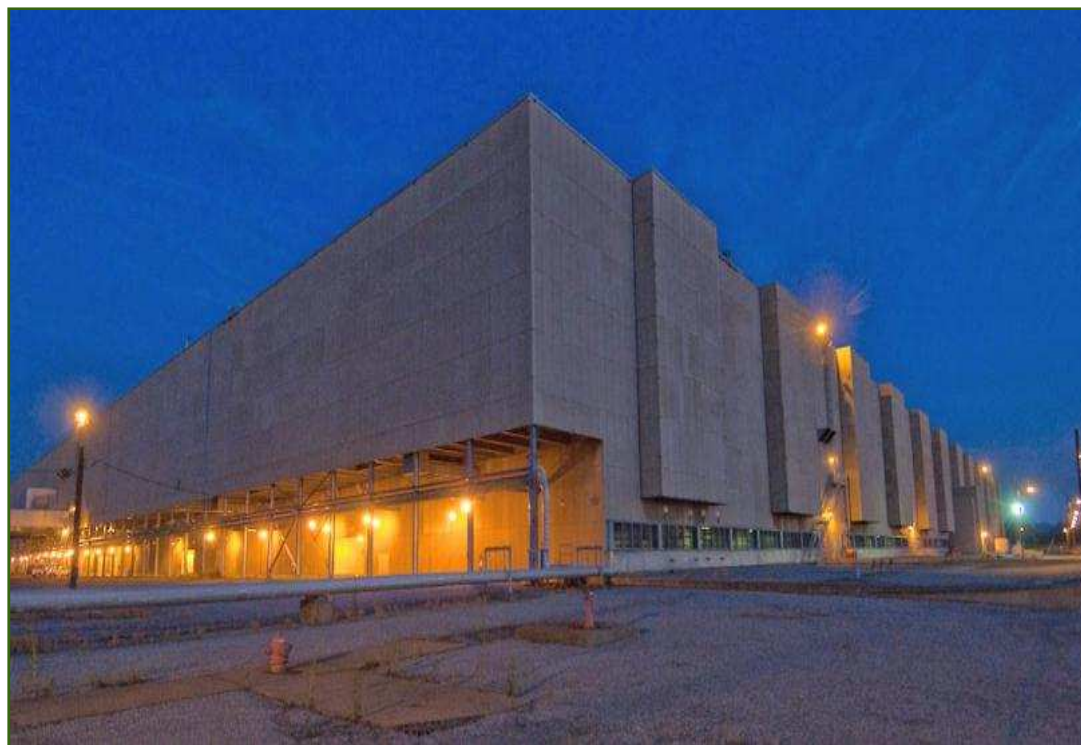
Paducah Quick Facts

- 3,500 + acre federal site
- Shared site with operating gaseous diffusion plant & DUF₆ conversion facility
- 1800+ jobs in Western Kentucky



Paducah Plant could transition from USEC operation to DOE cleanup status within a two-year window.

- PGDP may be returned to DOE and the lease terminated within the next two years.
- If that happens, private industry may have the opportunity to continue enriching uranium or commercially use plant assets as they become available.
- DOE will maintain responsibility for overall environmental cleanup under authority of the Paducah Federal Facility Agreement.





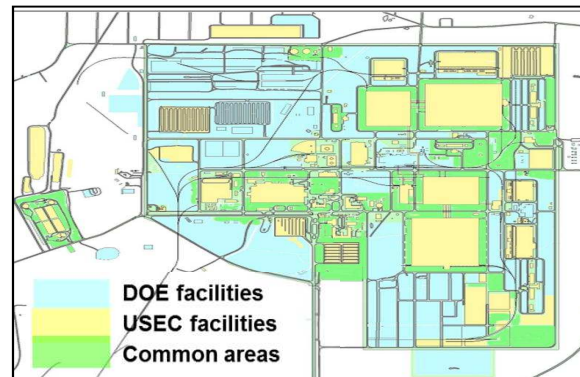
CURRENT CONDITIONS

Environmental Remediation



- Groundwater – Clean up chief sources and mitigate off-site risk
- Inactive Facilities – 25 structures: 24 razed
- Burial Grounds – Eight areas spanning ~66 acres
- Soils – 66 areas totaling ~115 acres, grouped to gain efficiencies.
- Surface Water – About six miles of creeks and ditches.

GDP



- DOE activities are conducted under DOE Authority governed by DOE Orders.
- USEC leases production and support facilities.
- USEC uranium enrichment activities are conducted under license issued by the Nuclear Regulatory Commission.

DUF₆



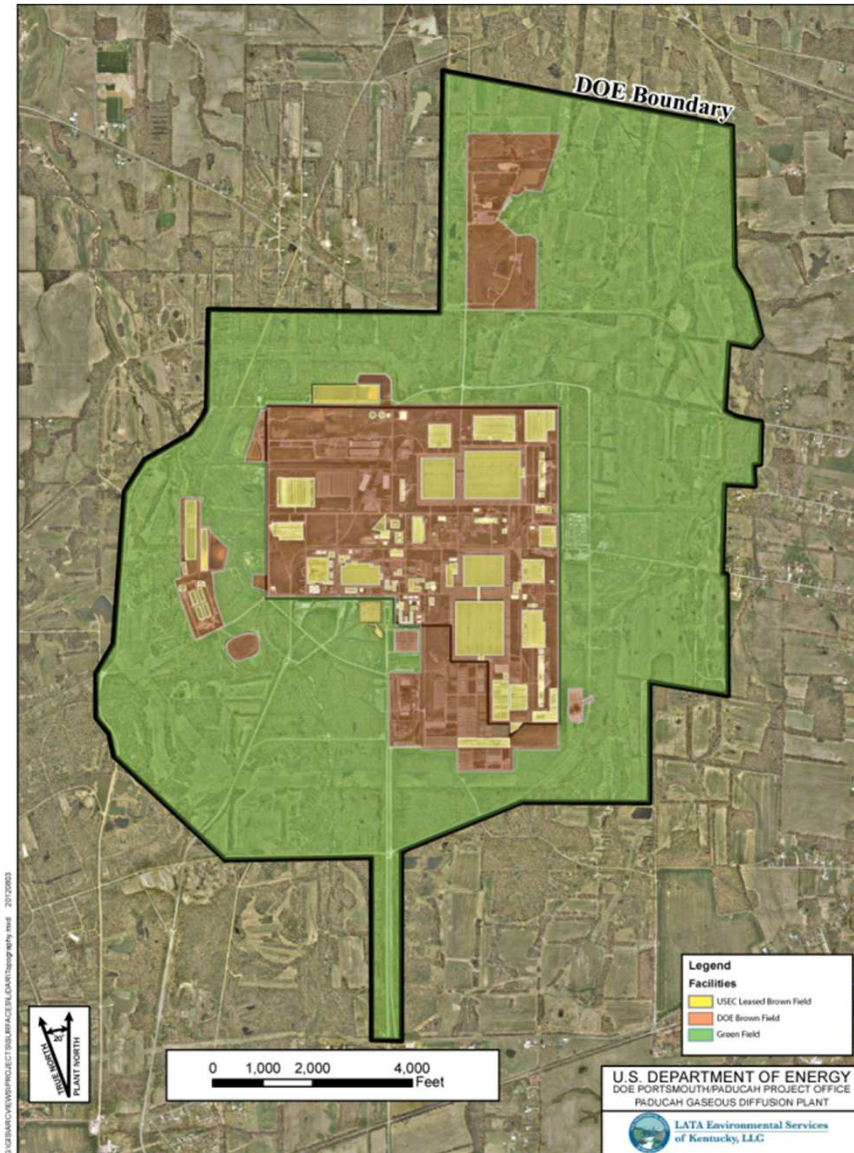
- B&W Conversion Services awarded DUF₆ contract in 2010 to operate facility
- Products of conversion process are uranium oxide, a more stable waste produce, and hydrofluoric acid, which has commercial value
- DUF₆ operations estimated to go through 2037



Reindustrialization & Reuse Initiatives

A key objective of the DOE EM mission is to ensure cleanup decisions are effectively integrated and supportive of future reuse initiatives:

- Site cleanup strategy consists of a 2 phased approach:
 1. Current efforts focused on specific areas prior to enrichment shutdown,
 2. Cleanup which will occur after shut-down of PGDP.
- A primary goal of the cleanup strategy is to allow:
 - early release/transfer of greenfield areas
 - remediate contaminated areas to safe brownfield levels
 - maximize opportunities for reindustrialization and reuse.



Reindustrialization & Reuse Initiatives

- PGDP has an extensive utilities and infrastructure, skilled workers, and is strategically located with various transportation options:
 - ✓ Avg. 26 million gal. daily raw water supply from river
 - ✓ 4 switchyards handle 161kV
 - ✓ >1,800 skilled workers
 - ✓ Nation's river hub
 - ✓ Rail, interstate link to major cities
- DOE and contractors are planning for transitioning enrichment facilities back to DOE.
- Community leaders are evaluating plant assets to identify reuse opportunities and attract new industry to minimize economic impacts.





PUBLIC OUTREACH

- Outreach efforts include:
 - KRCEE grant
 - Quarterly meetings
 - Public meetings
 - CERCLA Cell
 - Civic involvement
 - Elected officials briefings
 - Paducah CAB
 - Heath Middle school participation
- Outreach efforts have been extended to industry as well for future site use.
 - Site Industry Day
 - Expression of Interest



Paducah CAB meetings bring together DOE, stakeholders, and environmental regulators for discussion of site issues

PUBLIC OUTREACH

- Extensive future use study conducted by Kentucky Research Consortium for Energy and the Environment gathered information from many sources including extensive input from the local community.



KRCEE conducting stakeholder and focus group meetings and interviews

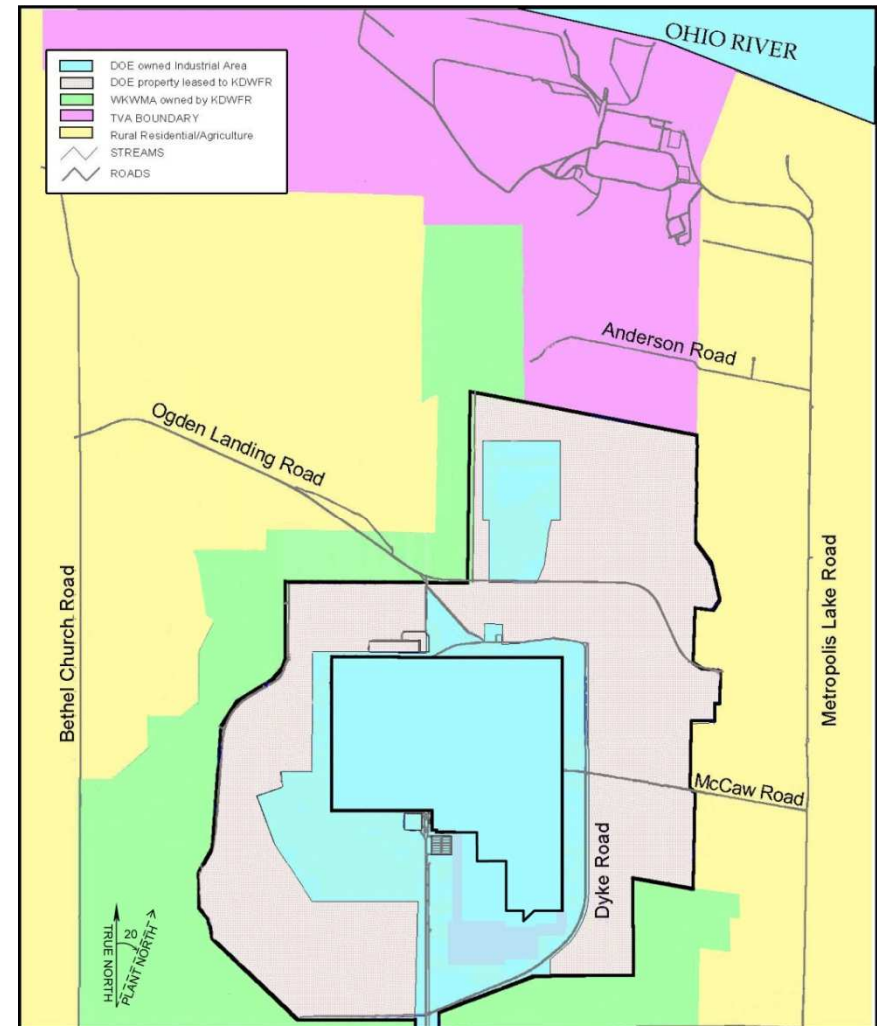


Paducah End State Vision

- Depending on how property is used, protective cleanup levels of environmental contamination may be different:
 - Industrial Use
 - Recreational Use
 - Residential Use

- The type of activities conducted by industrial workers and the amount of time they may be exposed to environmental contamination are different from that of residents living on the property, or seasonal recreational use.

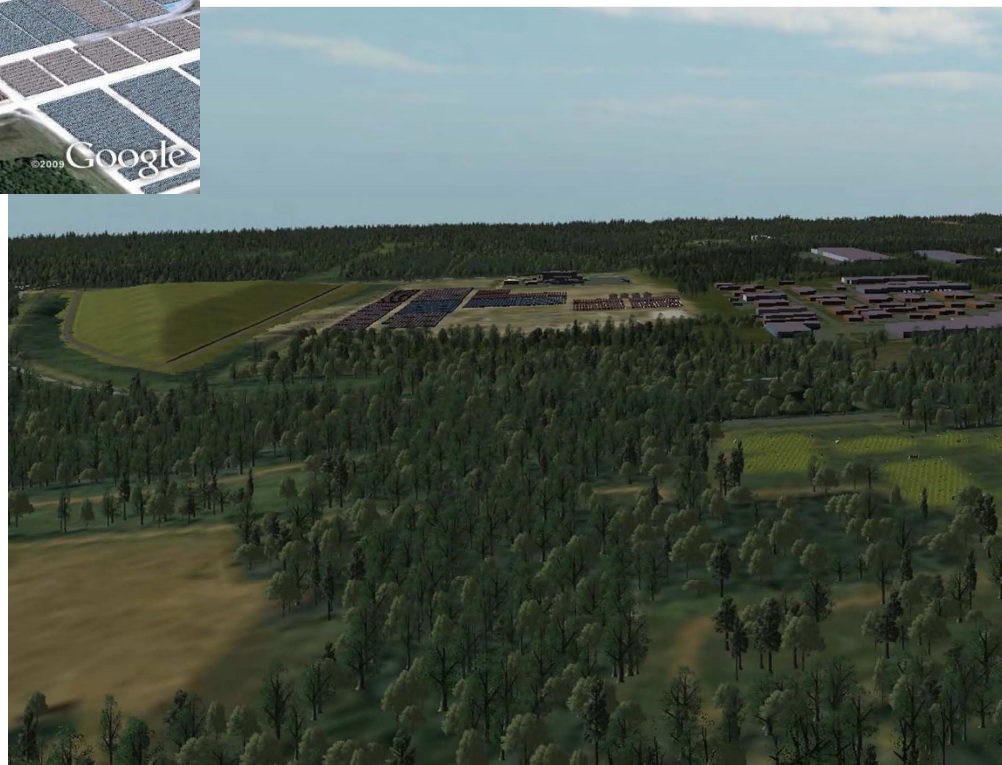
- The goal of the DOE cleanup strategy is to allow early transfer/reuse of greenfield areas and clean up brownfields to safe levels that will make best use of opportunities for reindustrialization and reuse.





Paducah Current Site

Paducah Industrial Site End State



2020
VISION



DUF6



PORTSMOUTH, OH



PADUCAH, KY

2020
VISION



DUF6



Mission:

Convert to uranium oxide and aqueous HF

Sell HF for industrial use

Permanently dispose oxide





Timeline

July 1998, Public Law 105-204 Directed Secretary to submit plan for Plants

July 2002, Public Law 107-206 Required DOE to build two facilities
Required all Oak Ridge DUF6 cylinders to go to Portsmouth

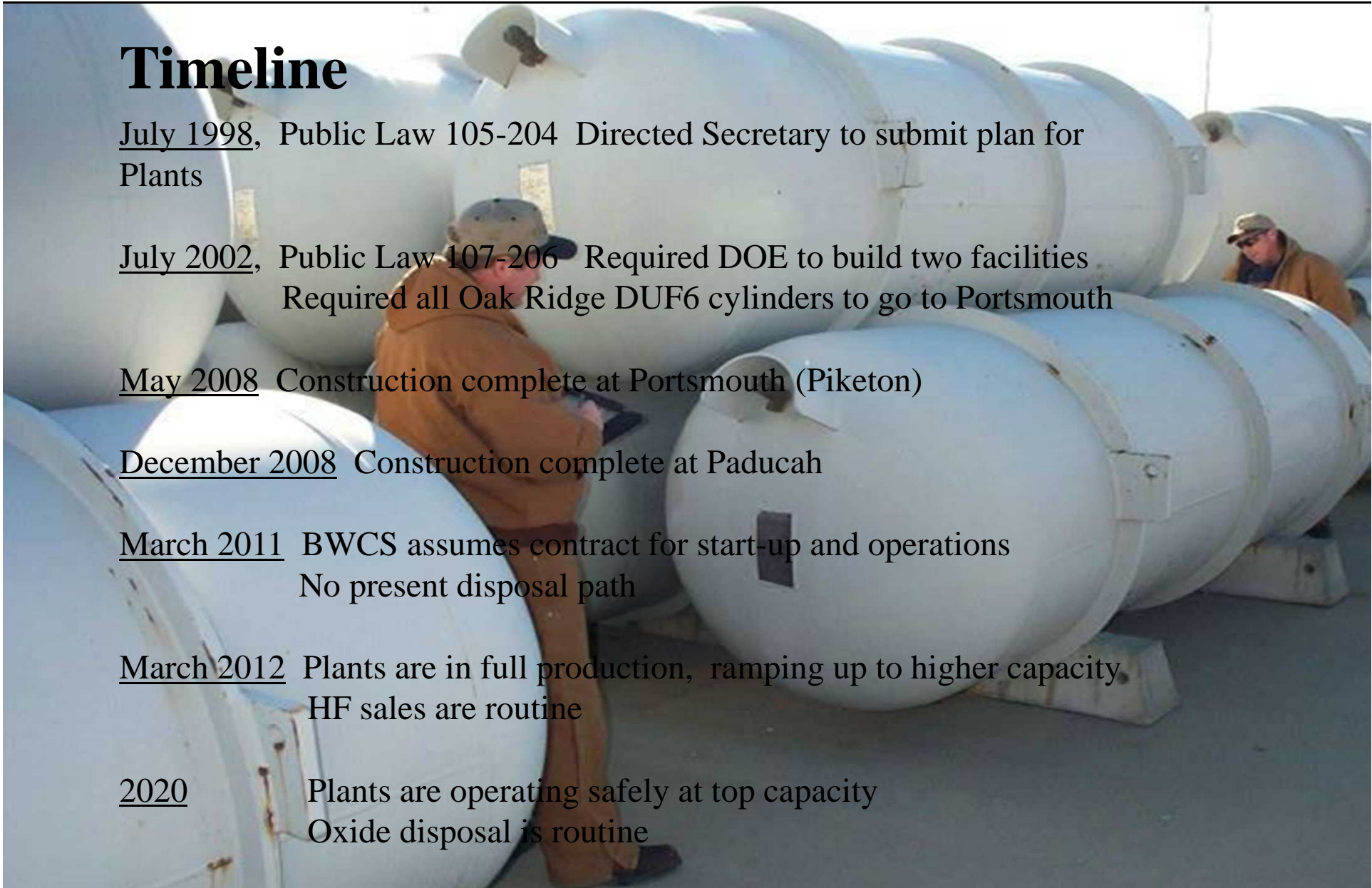
May 2008 Construction complete at Portsmouth (Piketon)

December 2008 Construction complete at Paducah

March 2011 BWCS assumes contract for start-up and operations
No present disposal path

March 2012 Plants are in full production, ramping up to higher capacity
HF sales are routine

2020 Plants are operating safely at top capacity
Oxide disposal is routine



**2020
VISION**



DUF6



Operational Status

Orlando, OH

27,000 cylinders DUF6
(50,000 Metric Tons)

Mission life of ~18 years

Three lines – six conversion units

Paducah, KY

37,000 cylinders DUF6
(440,000 Metric Tons)

Mission life of ~25 years

Four lines – eight conversion units

All lines running

Ramping up to safe, sustainable capacity

2020 Vision:

Both sites operating at peak safe and stable capacity.



2020 VISION



QUESTIONS

