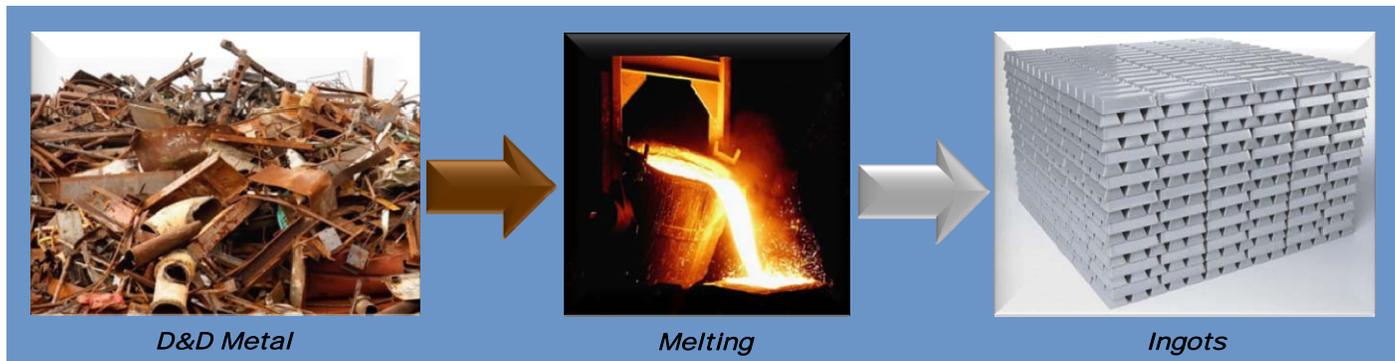




# Portsmouth Gaseous Diffusion Plant



## Portsmouth D&D and Asset Recovery



### Portsmouth D&D

Demolition of the Portsmouth Gaseous Diffusion Plant will produce an estimated 2.2 million cubic yards of waste. Of this waste, as much as 700,000–900,000 cubic yards (470,000–600,000 tons) is metal that may require size reduction and/or treatment to address contamination present in the metal. Asset Recovery is a method where the metal can potentially be recovered instead of being lost to traditional land disposal while preserving its value, developing opportunities for beneficial reuse, and potentially providing many technical, socioeconomic, and environmental benefits.

### Vision

Evaluate Asset Recovery as a framework to maximize the potential for beneficial reuse of metals expected to be generated as part of Portsmouth D&D efforts.

### CERCLA Decision Process

The CERCLA Site-Wide Waste Disposition Evaluation Project includes the evaluation of an alternative to implement actions for size reduction and treatment of metals, including thermal treatment (melting), to remove or reduce contamination associated with the metal that will be generated from the Portsmouth D&D project. This alternative will be:

- Evaluated in accordance with CERCLA and the recently issued Director’s Final Findings and Orders (DFFOs) for the Portsmouth D&D Project,
- Subject to Ohio EPA review and approval, and
- Subject to public review and comment.

If the CERCLA Site-Wide Waste Disposition Evaluation Project selects an alternative that includes

size reduction and treatment of metals from the Portsmouth D&D project, future cleanup decisions will include the evaluation of alternatives for size reduction and treatment of metals generated as part of individual cleanup actions. Future actions would be:

- Evaluated in accordance with CERCLA and the DFFOs,
- Compliant with storage/staging requirements, duration, and final disposition date for those metals,
- Subject to Ohio EPA review and concurrence, and
- Subject to public review and comment.

Efforts will be ongoing to identify and pursue beneficial uses for any metals generated, size reduced, treated, and staged as a result of CERCLA D&D cleanup work.

### Benefits

**Technical Benefits:** The Site-Wide Waste Disposition Evaluation will take into account many of the benefits of size reduction and treatment for metals. Some of those benefits include reducing waste volume, and contaminant mobility and toxicity:

- Melting can reduce D&D waste volumes by as much as 30%–40%,
- Melting can reduce toxicity by removing more than 95% of uranium contamination, and
- Melting can reduce mobility and potential releases and exposure by encapsulating any remaining contaminants within metal ingots.

If the preserved metal ingots must be land disposed, the risk to human health would be greatly reduced compared to disposing untreated D&D metal.



# Portsmouth Gaseous Diffusion Plant

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Reducing costs and complexities associated with classification issues:

- Size reduction and treatment activities for D&D metals can result in declassification and reduced security costs that otherwise would be required for the metals,
- Melting certain metal components could remove classified attributes that otherwise would result in the need to comply with extensive security requirements, and
- If the classified material was land disposed but not melted, security requirements could remain in place indefinitely which could result in more limited and costly disposal options.

**Socioeconomic Benefits:** Size reduction and treatment activities for D&D metals could create approximately 400 additional local jobs:

- Approximately 200 positions for construction of a melting/casting facility,
- Approximately 200 positions for operating the resulting melting/casting facility.

Size reduction, treatment, and storage of resulting metal ingots could preserve options for manufacturing and reuse of the recovered metals within the nuclear industry (not for public use). Reuse of the metal could result in additional jobs in southern Ohio, such as manufacturing raw material and fabricating products for controlled reuse.

Reducing the volume of D&D disposal wastes would reduce the amount of capacity (size) needed in a potential on-site land disposal cell and could result in availability of more acreage at the Portsmouth Site for commercial development following completion of D&D.

Size reduction and treatment facilities might serve as anchor tenants for other industrial development beyond the DOE and could lead to other opportunities for job growth and economic development in southern Ohio.

Size reduction and melting could help mitigate state equity and environmental justice concerns related to the potential disposal of Portsmouth waste in states such as Nevada and Utah. Reducing the volume of metals and/or finding beneficial reuse options would

reduce the amount of waste potentially shipped to other states for disposal.

If beneficial reuse opportunities are identified for the size-reduced and treated metals, the metal's value would be preserved, saving American taxpayers hundreds of millions of dollars that would be spent on buying new metal.

## Environmental Benefits:

- Eliminating the need to mine and process ore to make new metal can reduce greenhouse gas emissions by 1.3 million metric tons of CO<sub>2</sub>, and save 17 trillion BTUs of energy.
- Avoiding land disposal would reduce land impacts by consuming less usable land for disposal and using less borrow soil for the disposal process.
- Eliminating off-site disposal could reduce off-site waste transportation by up to 120 million railcar miles, or up to 700 million truck miles and an additional 0.2 million metric tons of CO<sub>2</sub>.
- The combination of size-reduction and treatment, along with the potential for reuse, directly supports the President's Executive Order 13514 on sustainability which requires:
  - Redirect 50% of solid waste by 2015
  - Reduce greenhouse gas emissions
  - Increase energy efficiency
  - Promote sustainability of local economies

## Next Steps

Size reduction and treatment must be evaluated and included in planning stages now to be preserved as a viable option. This includes regulatory documents, performance baselines, D&D contract scopes, and out-year funding requests. Comments and feedback on the concept of metals size reduction and treatment, and potential metals reuse, are needed to support its incorporation into future planning documents as appropriate.

## Key Project Contact

Greg Simonton, U.S. Department of Energy,  
e-mail: [greg.simonton@lex.doe.gov](mailto:greg.simonton@lex.doe.gov)  
(740) 897-3737