

Evaluation of a Proposed CERCLA Waste Repository at the Paducah Gaseous Diffusion Plant



PROBLEM STATEMENT

- A comprehensive waste management approach is needed to address the 3.7 million cubic yards of CERCLA waste (LLW, RCRA, TSCA, Mixed, Sanitary) to be generated during the next 30 years at the Paducah Gaseous Diffusion Plant (PGDP).
- Off-site disposal cost for 2.6 million cubic yards of waste is estimated at 1.0 billion dollars.
- Waste management alternatives:
 - On-site disposal in an engineered cell or
 - Off-site transport and disposal (e.g., Energy Solutions, NTS)
- Both alternatives will rely upon use an on-site Subtitle D landfill and management in place of some wastes.



PGDP On-site Cell: Current Assumptions

- A projected total of 3.7 million cubic yards of waste generated over 30 years.
- Approximately 573,000 cubic yards of this total generated during 2010 – 2019.
- Remaining 3.15 million cubic yards generated from 2019 – 2039 (primarily D&D soils and debris).
- On-site cell would require at least a 110 acre plot (30 acre waste footprint).
- Cell design to house up to 2.64 million cubic yards of waste
- Waste forms include ACM, concrete, construction debris, other dry solids (e.g., PPE), scrap metal, and soil.
- Waste classifications limited to LLW, RCRA, TSCA, and Mixed Waste.
- The bulk of the waste (2.5 million cubic yards) classified as LLW.
- 1,078,981 cubic yards of sanitary waste excluded from Cell



PGDP On-site Cell

Pros:

Cons:

- Purported significant cost savings (1 billion dollar delta)
- Potential for a more robust cleanup
- Consolidation of wastes currently buried in unlined pits
- Less transportation risks
- Local job creation
- Potential increase response action rate
- Reliable disposal capacity

- Potential seismic stability concerns (close proximity to the New Madrid Seismic Zone)
- Community acceptance
- Long-term stewardship
- Potential impacts to land use (decreasing the amount of land available for release for other uses)

Sources: Guyan, Dave. "Solving Cleanup Challenges Through Risk Reduction: Evaluation of CERCLA Waste Disposal Options at PGDP" PowerPoint presentation. PRS offices, Kevil, KY. 25 July 2007.



Important Issues to Consider

- Approach to seismic hazard analysis: Probabilistic? Deterministic?
- Design: Robust given seismic concerns
- Siting: Monitorable, *i.e.*, release to groundwater detectable
- WAC: Conservative performance modeling
- Classified Waste: Opposition to on-site disposal of classified waste
- Waste Characterization: Careful oversight of waste characterization
- Long-Term Stewardship: Agreement documented in Record of Decision (long-term care parameters undetermined)
- Footprint Reduction: Upfront agreements on burial grounds to be excavated and re-interred in cell.
- Early public involvement and acceptance (5 public meetings planned)



Path Forward

- DOE has funded Paducah Remediation Services to develop a Scoping Document, RI/FS Work Plan, RI/FS Report, PRAP, and Record of Decision that will address CERCLA waste disposal at the PGDP.
- Scoping document received on April 8, 2008
- RI/FS Work Plan was submitted on May 18, 2009 and is on hold
- The RI/FS Report due in late 2009 – will include a comprehensive evaluation of the two waste disposal alternatives as well as an evaluation of potential sites for an on-site cell.
- DOE projects having a Record of Decision available for review by 2011.

