



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

Future Vision: A View of What the DOE Complex will Look Like in 2020

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Panel 16

Waste Management Symposium

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Scope beyond 2020

EM Project Schedule Range	
Site	Completion Date (Range)
<i>Energy Technology Engineering Center</i>	2018 – 2025
<i>Oak Ridge Reservation</i>	2021 – 2022
<i>Nevada National Security Site</i>	2027 – 2038
<i>Moab</i>	2025
<i>Savannah River Site</i>	2038 – 2040
<i>Idaho National Laboratory</i>	2035 – 2044
<i>Paducah Gaseous Diffusion Plant</i>	2040 – 2052
<i>Portsmouth Gaseous Diffusion Plant</i>	2044 – 2052
<i>Hanford Site</i>	2050 - 2062



Hanford Waste Treatment
Plant

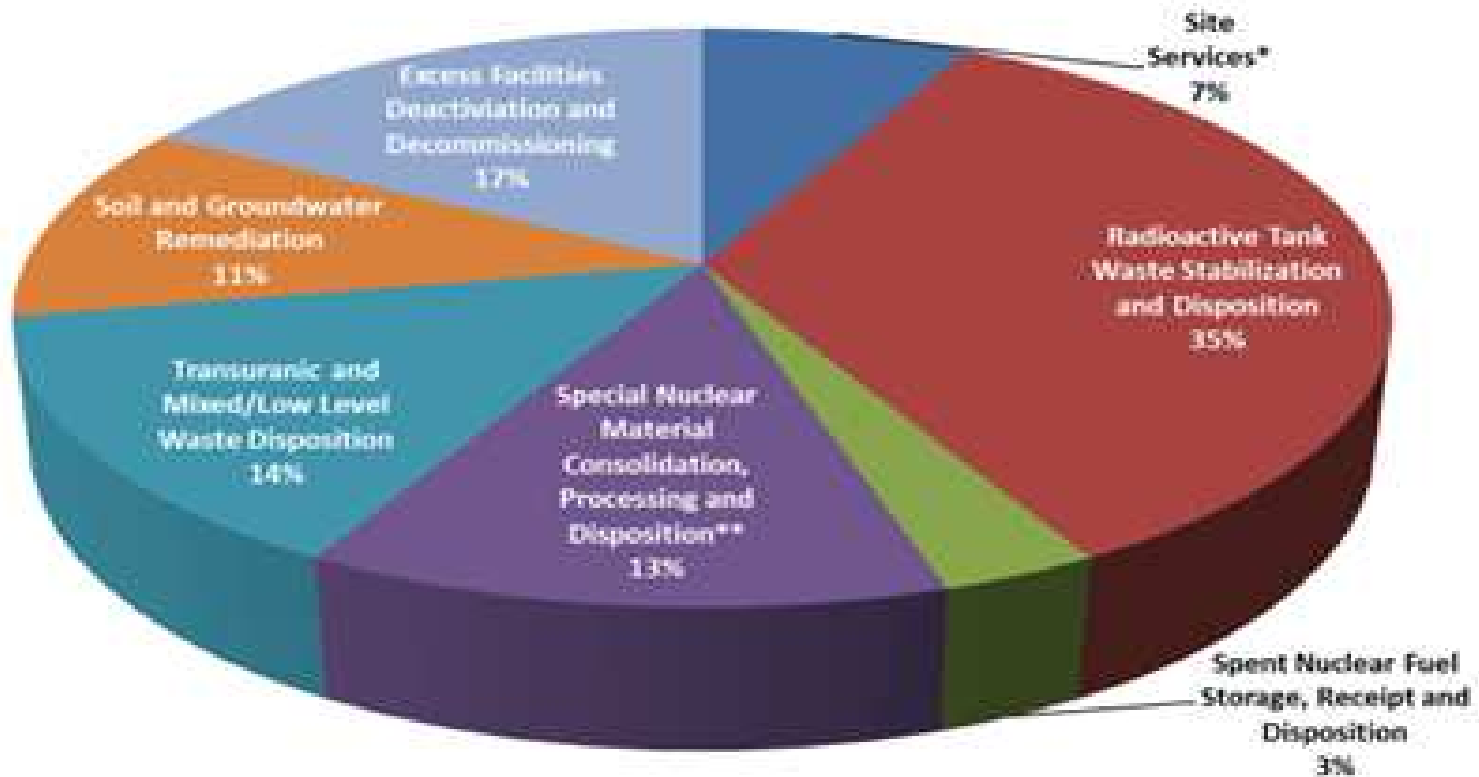


Savannah River Salt Waste
Processing Facility



Idaho Integrated
Waste Treatment Unit

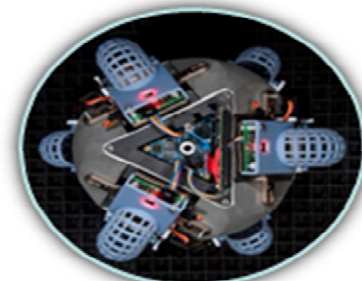
EM Budget Uncertainty



EM Congressional Budget Request for 2013

Technological Advancement

- EM's Approach to Science and Technology Advancement
 - Reduce technical and safety risk while maximizing regulatory compliance
 - Improve existing technologies to take advantage of advances in science and engineering
 - Develop new technologies to overcome intractable technical barriers
 - Identify insertion points for technology advances or new technologies to maintain momentum of cleaning progress
- Science and technology innovation and development results in:
 - Improved worker safety
 - Accelerated cleanup
 - Resolution of complex technical challenges
 - Reduced technical risk
 - Significant lifestyle cost savings



Tank Waste Projects

Two major tank waste projects within the current approved baselines



Salt Waste Processing Facility
Savannah River

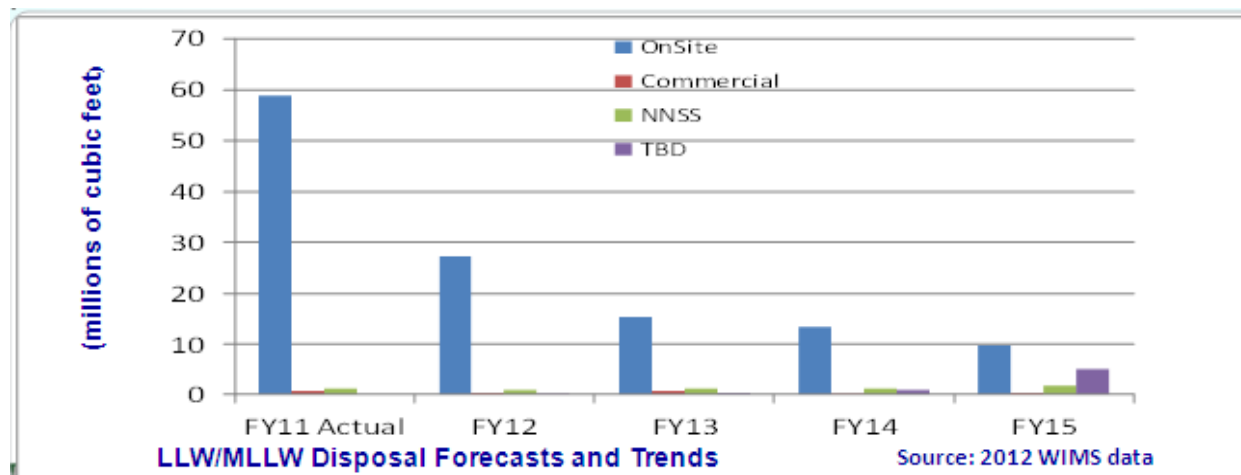


Waste Treatment Plant
Hanford

- To treat 90M gallons / ~600M curies of radioactive tank waste
- Blue Ribbon Commission made recommendations for HLW waste disposition
- DOE plan - Operations at a geologic repository to commence by 2048

TRU/Mixed LLW/LLW Waste Disposition

- Majority of legacy TRU waste to WIPP by 2020, except Hanford
- Operations at NNS for Mixed LLW/LLW disposal to continue at least until 2027
- On-site disposal capacity at Hanford ERDF facility expanded to 16.8 million tons of LLW, Hazardous, and Mixed LLW after addition of cells 9 and 10 in 2011.
- Develop and implement GTCC disposal facility(ies).
- Continue safe, compliant use of commercial disposal facilities for some waste streams.



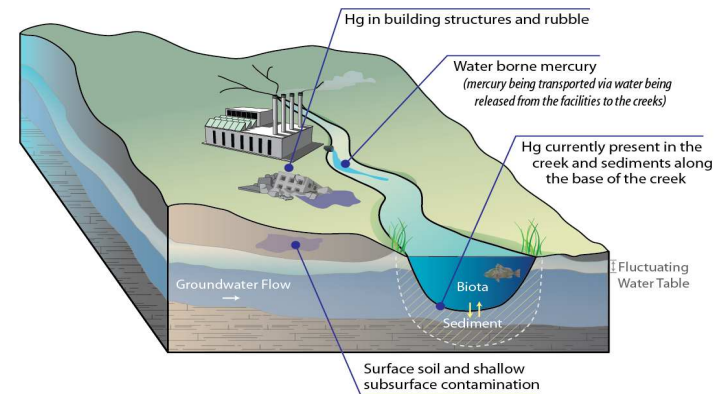
Deactivation and Decommissioning

- D&D is the second-highest cost element in the DOE-EM program and is estimated at \$29 billion to-go
- EM's current life-cycle scope comprises over 3000 facilities
- Many facilities are one-of-a-kind and/or unique to DOE with unprecedented scope and complexity
- Many are deteriorating, contain millions of curies, and represent major potential risk
- Require new technologies



Soil and Groundwater Remediation

- Massive soil and groundwater contamination problem from past operations
- 60 sites in 22 states with groundwater contamination
- Over 200 contaminated groundwater plumes
- Over 300 remedies deployed or proposed
- State of the art tools being developed for:
 - Characterization
 - Remediation
 - Long-term monitoring
 - Modeling



Mercury Remediation Challenge at Oak Ridge Reservation



Hanford 200 W Groundwater Treatment Facility

Asset Revitalization Initiative

- Asset Revitalization Initiative (ARI) is a DOE-wide effort to advance beneficial reuse of DOE's unique mix of assets
- Promotes collaboration between public and private resources
- DOE-HQ Task Force, created to accomplish DOE ARI Vision, initially identified issues and challenges.
- The Task Force is now focusing on developing solutions for DOE-wide implementation.
- So far, local communities around DOE sites have received a total of more than 18,315 acres for beneficial reuse.

Rocky Flats Wild Life Refuge



Savannah River Bio-mass facility



Hanford B Reactor
National Historic Landmark



Conclusion

- We have delivered significant cleanup results in the past several years, while completing projects on time and within cost
- By 2020, EM goal is
 - To have many more sites completely remediated
 - Develop a set of advanced tools to facilitate resolution of complex cleanup issues
 - Transfer many more excess real property assets at DOE sites to the community for economic development
 - Become more sustainable
- Time is not on our side – costs and risks increase over time

