



U.S. DEPARTMENT OF
ENERGY

RISK AND CLEANUP DECISION MAKING

ENVIRONMENTAL COUNCIL OF THE STATES

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A Common Goal: Protection of Human Health and the Environment

Environmental Management Priorities

- Activities to maintain a safe and secure posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent nuclear fuel storage, receipt, and disposition
- Special nuclear material consolidation, processing, and disposition
- High risk soil and groundwater remediation
- Transuranic and mixed/low-level waste disposition
- Soil and groundwater remediation
- Excess facilities deactivation and decommissioning



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DOE Office of Environmental Management FY 2013 Budget Request



Oak Ridge K-25 Facility (\$80M)



Savannah River Defense Waste Processing Facility (DWPf) (\$154M)

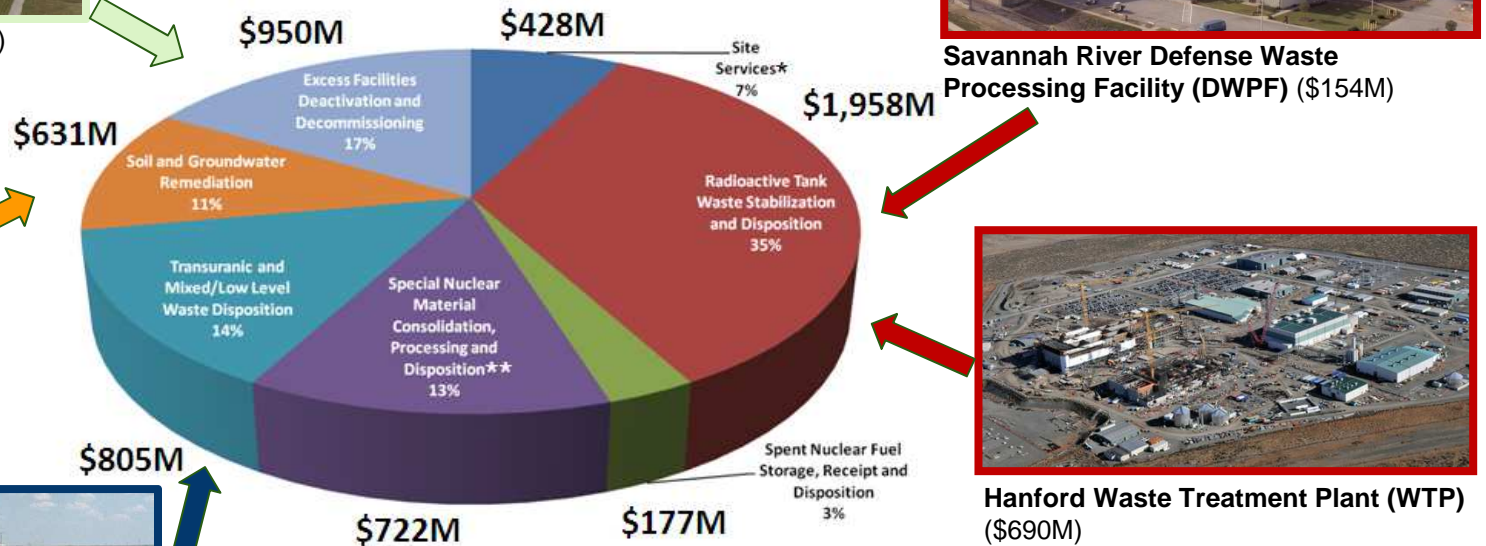
FY 2013 Budget Request - \$5.65B



Idaho Waste Exhumation (\$90M)



Waste Isolation Pilot Plant (WIPP) (\$150M)



Hanford Waste Treatment Plant (WTP) (\$690M)

*Includes Program Direction, Program Support, TDD, Post Closure Administration and Community and Regulatory Support

** Includes Safeguards and Security



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Compliance, Risk, and Priority Setting

- Environmental Compliance: One of EM's top program drivers
 - Federal and state environmental statutes, regulations, and guidance
 - DOE self regulatory authority for radioactive waste management
 - Defense Nuclear Facilities Safety Board recommendations
- Risk prioritization: Existing processes provide the framework
 - Sequence and schedule – Federal Facility Agreements and Consent Orders
 - Remedy Selection – CERCLA Nine Criteria and Waste Determinations/Disposal Authorization Statements
- Risk-informed decisions for cleanup provide a balanced approach
 - Protection and remediation of environmental resources
 - Recognition that social, economic, and environmental factors shape prioritization and remedial decisions



1996 Federal Facilities Environmental Restoration (Keystone) Dialogue Committee: “Process Recommendations”

- Developed by federal and state agencies, tribal nations, and stakeholder groups (<http://www.epa.gov/fedfac/fferdc.htm>)
- Provided the basis for several of EM’s processes:
 - Early public and tribal involvement (e.g. Integrated Priority Lists)
 - Communication (recognizing the embargo period)
 - Coordination among multiple regulators
 - Transparency and confidence in the risk ranking methodology
 - Rolling milestones
 - Flexible fair share allocation of shortfalls
 - Predictable but not necessarily level funding



1996 Federal Facilities Environmental Restoration Dialogue Committee: “Risk Plus Other Factors”

- Future land use
- Cost effectiveness and relative risk reduction value
- Life cycle cost analysis
- Actual and anticipated funding
- Ecological impacts
- “Mortgage” reduction
- Support to other agency missions
- Technology



NAS Report: Sustainability and the U.S. EPA

- NAS study completed for the U.S. Environmental Protection Agency (EPA) in September 2011.
- The committee recommended that EPA adopt or adapt a comprehensive Framework which requires a comprehensive approach including specific processes for incorporating sustainability into decisions and actions.
- EPA should incorporate upfront consideration of sustainability options and analyses that cover the three sustainability pillars (social, environmental, and economic), as well as trade-off considerations into decision making.
- Although the committee limited its recommendations to EPA, it felt that these recommendations are pertinent to the concerted effort of all federal agencies and sectors of society to meet the challenges of a sustainable future.



National Governors Association Federal Facility Task Force Principles for State and DOE Engagement

- States support a sustained, quality cleanup that protects human health, safety, and the environment and complies with state-DOE agreements.
- Open and transparent communication between states and DOE is essential for achieving successful cleanup.
 - Issues that have complex-wide implications should have complex-wide input and planning.
- State participation is a critical element of the DOE budget process and the establishment of environmental priorities.
 - States support a “risk plus other factors” approach to priority-setting, as defined in the Final Report of the Federal Facilities Environmental Restoration Dialogue Committee.
- Proactive engagement between DOE and states is crucial when milestones or other commitments may be in jeopardy.
 - In cases where one or more Federal Facility Agreement would be impacted by changes in another state’s cleanup agreement, states will seek to develop a common understanding of the requested change.



NAS Report: Alternatives for Managing the Nation's Complex Contaminated Groundwater

- NAS study completed for the U.S. Army Environmental Command (AEC) in November 2012.
- The study addresses the technical and management issues arising from barriers to restoration of contaminated groundwater at complex Department of Defense sites.
- The committee's conclusions and recommendations were:
 - “If the effectiveness of site remediation reaches a point of diminishing returns prior to reaching cleanup goals and optimization has been exhausted, the transition to monitoring natural attenuation or some other active or passive management should be considered using a formal evaluation.”
 - “Although the cost of new remedial actions may decrease at complex sites if more of them undergo a transition to passive long-term management, there will still be substantial long-term funding obligations.”
 - “Long-term management of complex sites requires an appropriately detailed understanding of geologic complexity, and the potential distribution of contaminants ..., as well as the unique biochemical dynamics...”



NAS Workshop for Next Generation, Risk-Informed Clean Up and Closure

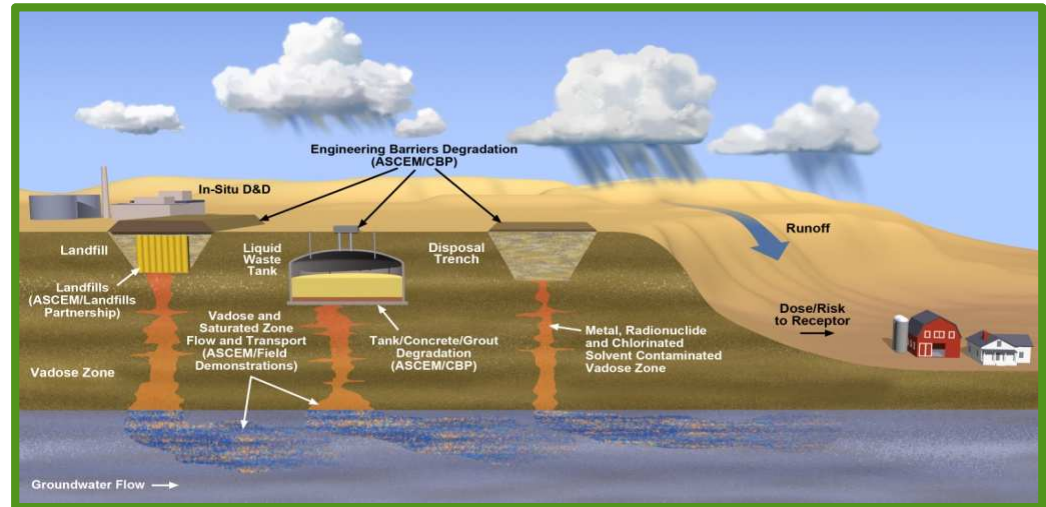
NAS charged by EM to facilitate workshop bringing together

- DOE, DOD, others
- EPA (regions and HQ), NRC
- State Regulatory Agencies and the Environmental
- Key Stakeholders
- SMEs from national labs and universities

to discuss topics such as

- Holistic approaches for remediation of sites with multiple contaminant sources and multiple post-closure uses, including technically based point-of-compliance and point-of-use monitoring locations.
- Effective post-closure controls: monitoring, engineered controls and natural controls
- Assessing performance of site remedies and closures, especially technically advanced approaches that reduce performance uncertainties and need for post-closure controls on land use, resource management and intruder prevention.
- Risk-informed decision-making

NAS is working to have this workshop in FY2013.



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Environmental Management Advisory Board Risk Subcommittee

- The Environmental Management Advisory Board (EMAB) Risk Subcommittee is evaluating process and tools that can be used to make risk informed decision making more transparent to stakeholders.
 - A risk-informed prioritization system:
 - Provides balanced approach between
 - Protection and remediation of environmental resources
 - Treatment and disposition of radioactive waste and special nuclear materials
 - Deactivation and decommissioning of facilities
 - Recognizes that human and environmental risks are key factors shaping prioritization
 - Allows responsible parties (DOE, EPA and TDEC) to consider exogenous factors in addition to risk input
- EMAB Risk Subcommittee is also evaluating how EM can use EPA's "sustainability toolbox" in the decision making process and how EPA Regions are adopting sustainability into their decision making.

