



U.S. DEPARTMENT OF
ENERGY

Environmental Management Advisory Board Meeting

James A. Rispoli

Assistant Secretary

Office of Environmental Management

Cincinnati, OH ❖ September 25, 2008



EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

We Solve Problems That Once Seemed Unsolvable

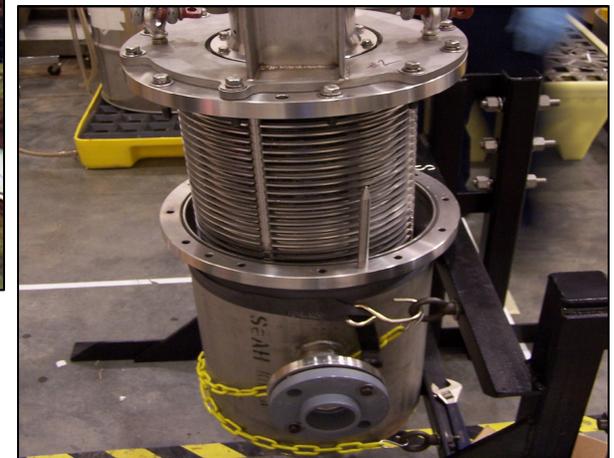
The Department's work has led to the design, construction and operation of **first-of-a-kind facilities and technologies**



Hanford, Washington
Liquid Waste Treatment Plant =
US \$12 Billion



Device for removing sludge from
bottom of liquid waste storage tank



Microfilter for separating solids
and liquids developed at
Savannah River, South Carolina



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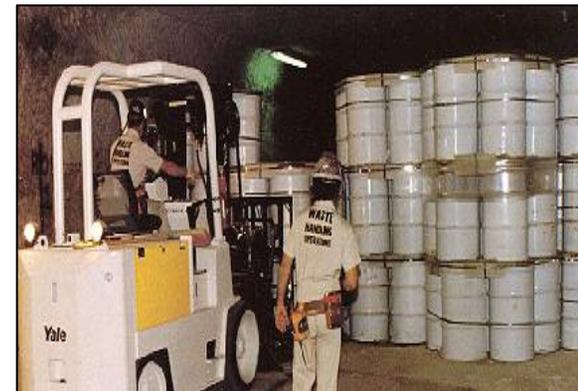
Success Story #1: Disposal of Transuranic Waste

- Transuranic waste is disposed at the **Waste Isolation Pilot Plant (WIPP)** in Carlsbad, New Mexico
- WIPP is the **world's first** deep geological repository
- WIPP has provided a **safe, stable** solution for waste disposition



Depository rooms are located 650 meters below ground

Waste being safely shipped from states across the U.S.



Drums being prepared for disposal at WIPP



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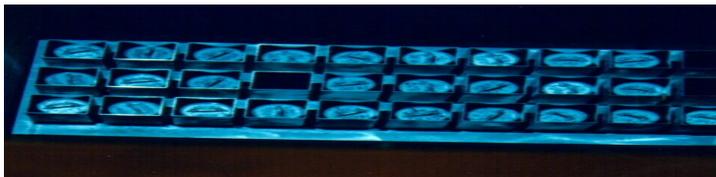
Success Story #2: Spent Nuclear Fuel

EM manages more than **2,400 metric tons of spent nuclear fuel (SNF)**, including foreign research reactor fuel of U.S. origin



- Hanford: **K Basins closed**, SNF dried and safely stored
- Other remaining DOE SNF is being **consolidated** at Savannah River and Idaho
- U.K. officials have sought EM's help on **fuel drying**, sludge retrieval and processing

Receipt and Storage of spent nuclear fuel at U.S. DOE facilities



Spent Nuclear Fuel

Global Energy Benefit: Supports global non-proliferation



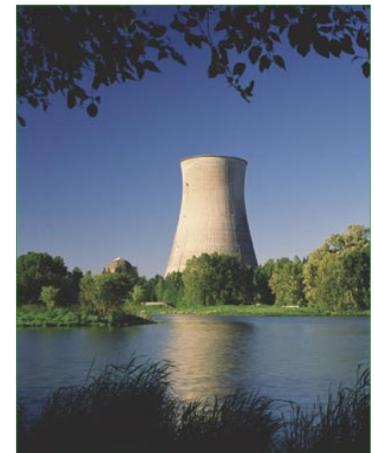
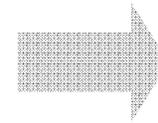
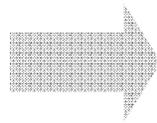
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Success Story #3: Special Nuclear Materials

- Our program manages more than **30 metric tons of excess special nuclear materials** such as plutonium, enriched uranium, and U-233
- Surplus plutonium will be fabricated into **mixed oxide (MOX) fuel** for commercial nuclear power, or dissolved, recovered, or vitrified
- Highly enriched uranium is being downblended to low enrichment for **use as commercial reactor fuel**



MOX Fuel Fabrication Facility,
Savannah River. South Carolina

Global Energy Benefits: Non-proliferation, and former weapons material becomes feedstock for commercial nuclear power



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Success Story #4: High-Level Waste

➤ Building Our Future:

- Waste Treatment Plant (Hanford)
- Defense Waste Processing Facility (Savannah River)
- Salt Waste Processing Facility (Savannah River)
- Sodium Bearing Waste Plant (Idaho)
- West Valley Vitrification Plant (New York)



Waste Treatment Plant Construction, Hanford, WA



Global Energy Benefit: Demonstrating the management of waste generated by the nuclear fuel cycle



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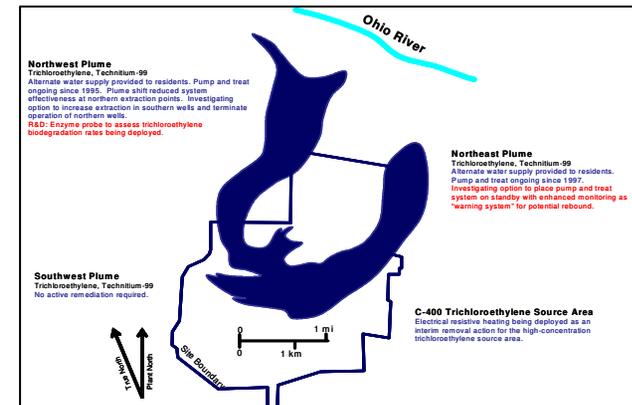
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Success Story #5: Soil and Groundwater

- Cleaned up **240 sq. km** of contaminated groundwater
- Stabilized more than **100** groundwater plumes
- Developed **pump-and-treat** and **passive barrier** remedies for contaminants such as strontium-90
- Implementing **permanent, cost-effective technologies** to remove and/or immobilize uranium, metals, and chlorinated organics in groundwater and soil



Electrocoagulation treatment of hexavalent chromium near Columbia River, Hanford, WA



Paducah, KY plume contaminated with Technetium-99 treated since 1997



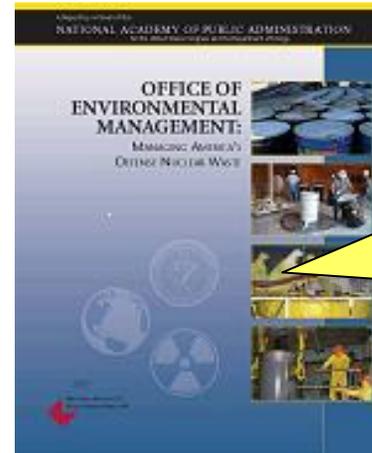
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Success Story #6: Project Management

- Commit to greater **project management rigor**
- Independently verify **project baselines** – scope, cost, schedules
- Strive for **“Best in Class” Capability**
- Implement a More Effective **Procurement Process**
- Focus on **Project Execution**



“EM is on a solid path to becoming a high-performing organization.”

Implementing the NAPA Recommendations



- 2006 Project of the Year (Rocky Flats)
- 2007 Project of the Year (Fernald)
- Project Management Institute



Institutionalizing project management best practices



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May 2008 EMAB Reports and Recommendations

- **Small Business, Acquisition, and Project Management**
- **Employee Recruitment and Retention**
- **Communications**
- **Community Outreach**
- **Technical Uncertainty and Risk Reduction**
- **Discretionary Budgeting**



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In Conclusion



U.S. DOE's Environmental Management program is providing cleanup progress now, along with energy solutions for the future

Our record proves that safe, effective nuclear waste management is possible:

- We have effectively reduced risk to the environment and the community
- Each year, our knowledge and skill base grows

Our work provides global benefits beyond nuclear cleanup:

- Advancing nuclear energy and construction during a stagnant time for the industry
- Enhancing global security and nuclear non-proliferation

Enormous challenges lie ahead:

- The pressing need to continue to make technological advances
- The willpower of societies to continue to pursue difficult, expensive work



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