U.S. Department of Energy
Environmental Management Program

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EM is the world's largest cleanup program . . .

114 Sites

31 States

2,000,000 Acres

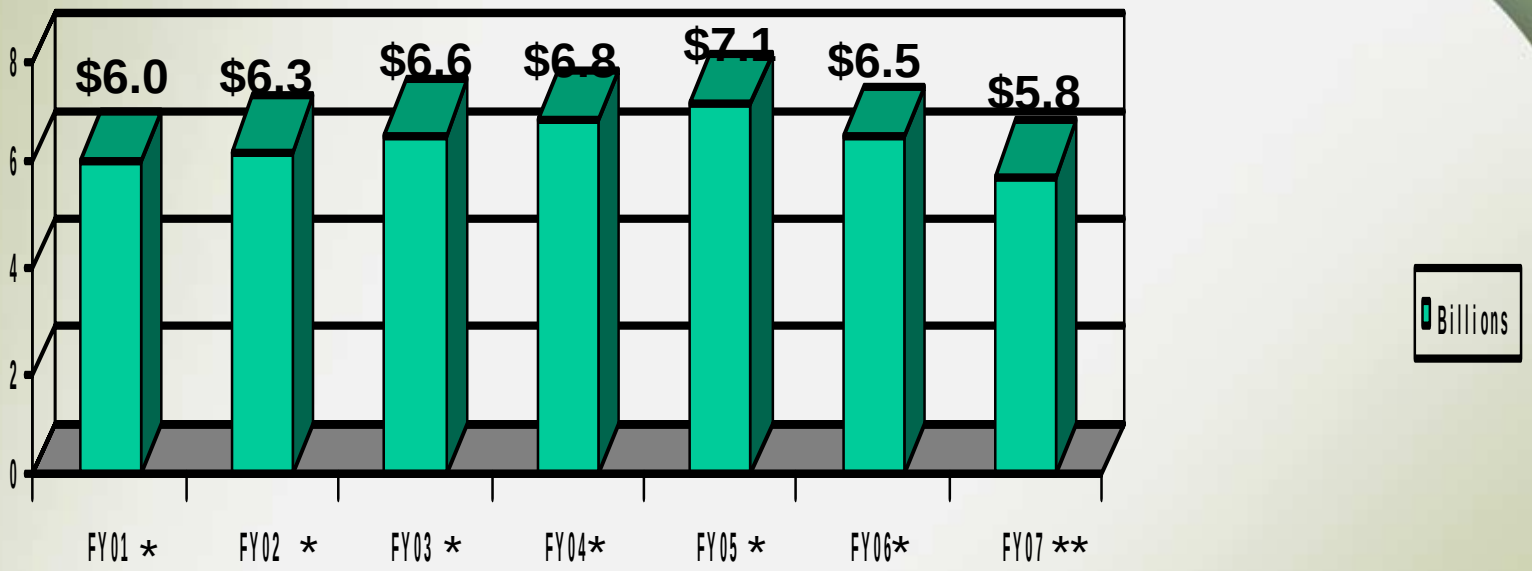
$6,500,000,000 Fiscal Year 2006 Congressional Appropriation

34,200 Workforce (Federal and contractor)

EM Leadership Focus

- Safety
- Risk Reduction
- Project Execution
  - Acquisition Strategies
  - Identification and Management of Risks
  - Cost and Schedule Baselines
- Organizational Alignment
- Feedback and Lessons Learned

Building On Closure Success
Historic EM Funding



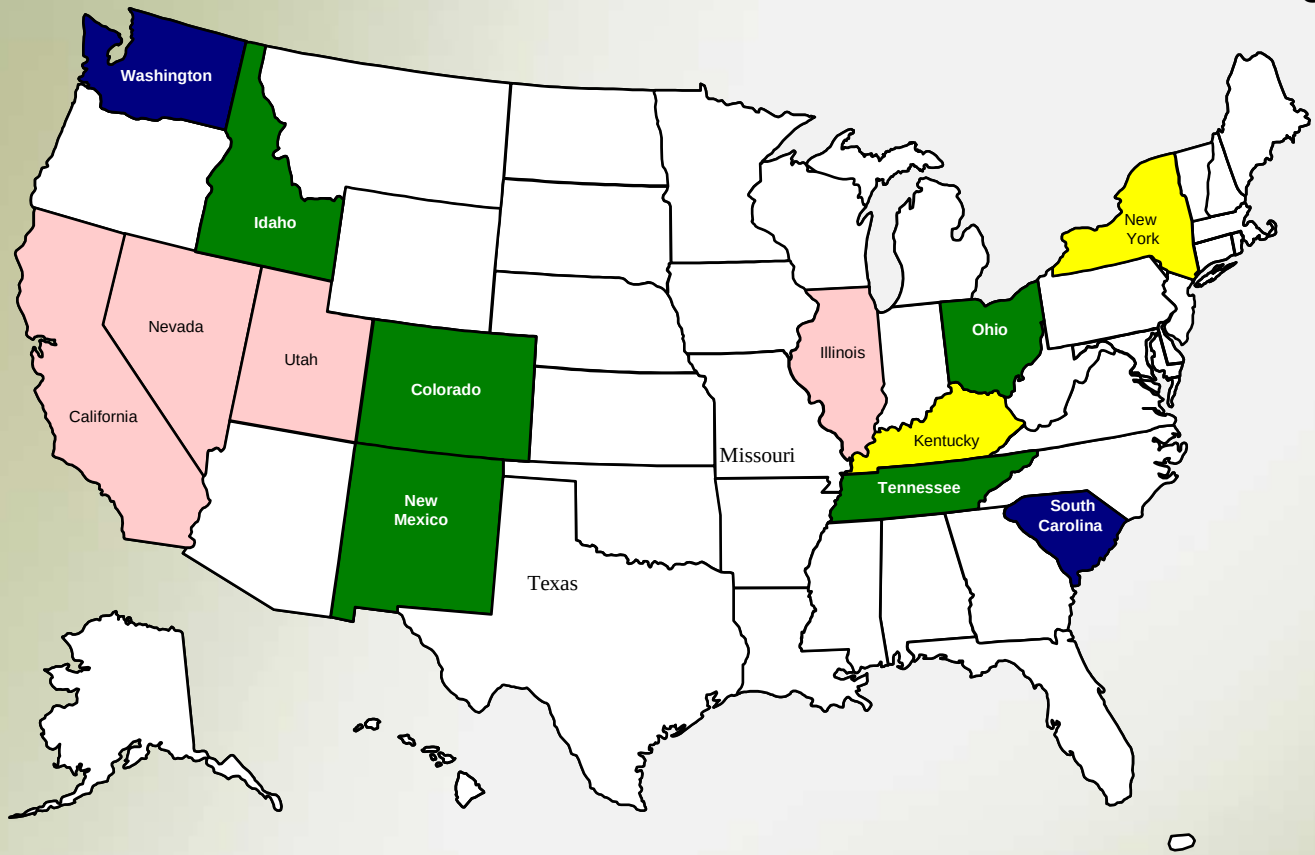
*Congressional Appropriations **Congressional Request

FY 2001-2007

- **As results are achieved and "mortgages" are reduced, funding has begun to decline**
- **However, we continually evaluate regulatory and legal requirements, performance, and new scope relative to funding requirements**

EM Program FY 2006 Budget

Budget : $6.5 Billion



State[a]	FY 2006 EM Budget ($ in Millions)
Washington	$1,857
South Carolina	$1,414
Ohio	$757
Colorado	$585
Idaho	$547
Tennessee	$511
New Mexico	$369
Kentucky	$166
New York	$113

[a]Table only includes states with $50M or greater in EM funding.

Legend:

Over $1 billion | **$300 million to $1 billion** | **$50 million to $300 million** | **Less than $50 million**

We have made tremendous progress in nuclear materials dispositioned . . .

6,314 Containers — **Plutonium Metal or Oxide** packaged for long-term storage

5,541 Containers — **Enriched Uranium** packaged for long-term storage

107,790 Kilograms — **Plutonium or Uranium Residues** packaged for disposition

11,307 Metric Tons — **Depleted and other Uranium** packaged for disposition

Through FY05

. . . radioactive waste dispositioned . . .

149	Tanks	**"Pumpable" Liquid Waste** removed from Hanford single-shell tanks
2,244	Containers	**High-Level Waste** packaged for final disposition
2,127	Metric Tons of Heavy Metal	**Spent Nuclear Fuel** packaged for final disposition
27,875	Cubic Meters	**Transuranic Waste** disposed
947,006	Cubic Meters	**Low-Level and Mixed Low-Level Waste** disposed

Through FY 2005

. . . and facilities and sites completed. . .

9 **Material Access Areas** eliminated

57 **Nuclear Facility** completions

234 **Radioactive Facility** completions

1,006 **Industrial Facility** completions

5,745 **Release Sites** (remediation complete)

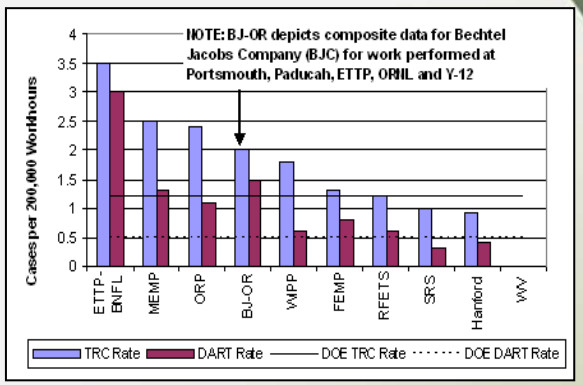
76 **Geographic Sites** eliminated

Through FY 2005

. . . while significantly improving our safety performance.

Reduced worker risk by:

- **Stabilizing, packaging, and consolidating nuclear materials**
- **Eliminating liquid waste**
- **Closing SNF basins**
- **Shipping radioactive waste to disposal sites**
- **Continually evaluating and enhancing worker safety programs through programs such as the Voluntary Protection Program and Integrated Safety Management**



We are scheduled to complete as many as 9 sites in 2006 . . .

Lawrence Berkeley National Laboratory	CA
Kansas City Plant	MO
Lawrence Livermore National Laboratory—Main Site	CA
Ashtabula Environmental Management Project	OH
Columbus Environmental Management Project	OH
Fernald Environmental Management Project	OH
Miamisburg Environmental Management Project	OH
Rocky Flats Environmental Technology Site	CO
Sandia National Laboratories	NM

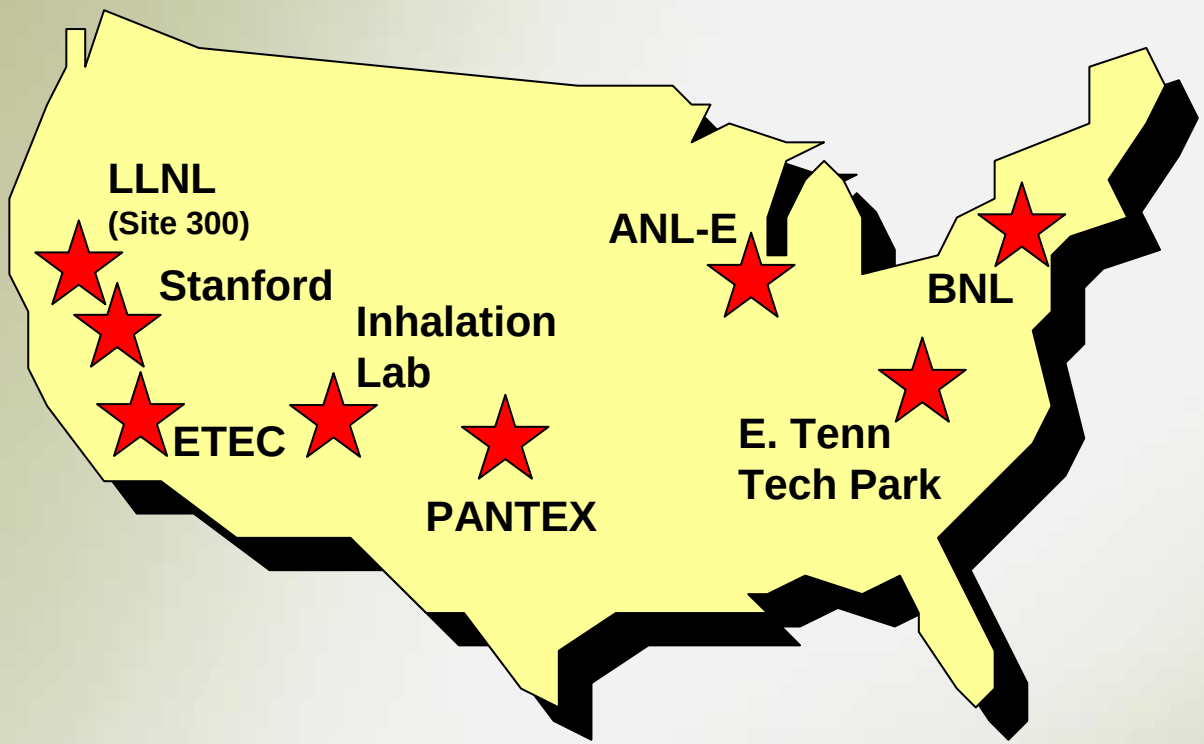
Rocky Flats Environmental Technology Site
July 1995

Rocky Flats Environmental Technology Site
October 2005

Feed Materials Production Center
October 1987
Fluor Fernald
8364.2

Fernald Closure Project
April 2005
8364.3

. . . and as many as 8 additional sites between 2007-2009.



2008	
Lawrence Livermore National Laboratory—Site 300	CA
PANTEX Plant	TX
Inhalation Toxicology Laboratory	NM
2009	
Brookhaven National Laboratory	NY
Argonne National Laboratory-East	IL
Stanford Linear Accelerator	CA
Energy Technology Engineering Center	CA
East Tennessee Technology Park	TN

Tank Waste

Four sites have 90 million gallons and 700 million curies of tank wastes needing treatment, storage and disposal:

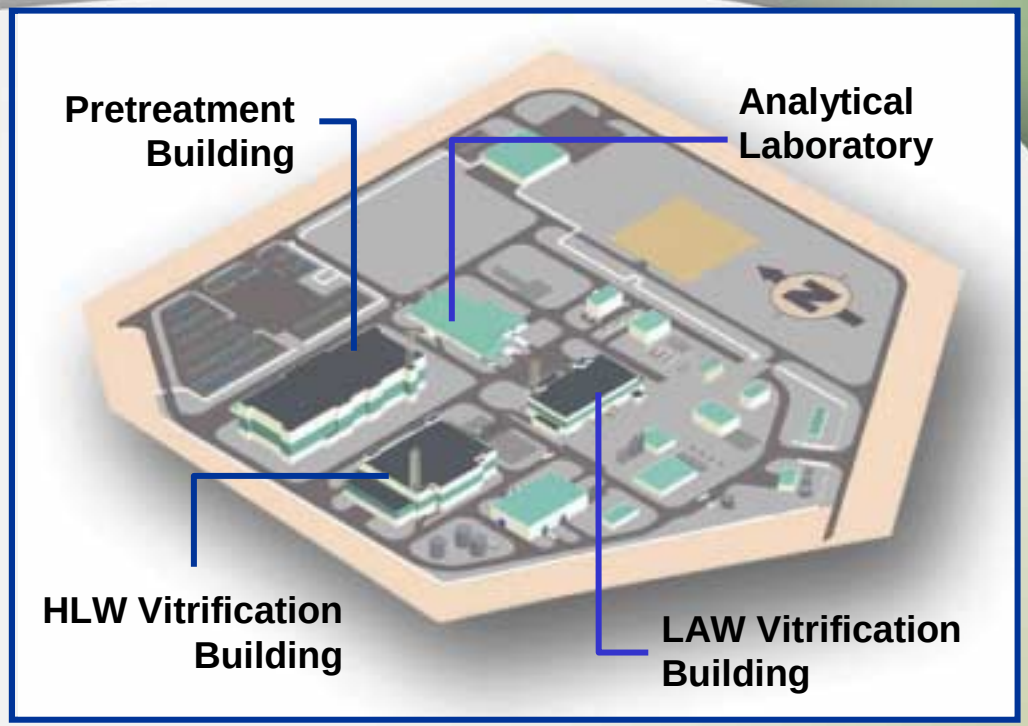
- **Three DOE-owned sites:**
  - **Hanford**
  - **Savannah River Site (SRS)**
  - **Idaho National Laboratory (INL)**
- **One State of New York-owned site:**
  - **West Valley Demonstration Project (WVDP)**

TANK WASTE MANAGEMENT STRATEGY

- Safely store waste in form of liquids, sludges, and saltcakes
- Retrieve waste for purposes of pretreatment, treatment, and disposal
- Pretreat alkaline waste (SRS, Hanford and WVDP), typically through a separations process to separate waste
- Treat high-activity alkaline waste (SRS, Hanford and WVDP) using vitrification
- Dispose calcine (INL) either directly in its existing form or following alternative preparations for disposal in the HLW repository.
- Stabilize tank waste residues intended for in-place closure

WTP

Hanford's Waste Treatment Plant will be the world's largest chemical-radioactive waste treatment plant to treat Hanford's underground tank waste



- **Pretreatment (PT) Facility**
- **Low Activity Waste (LAW) Vitrification Facility**
- **High Level Waste (HLW) Vitrification Facility**
- **Analytical Laboratory**
- **Balance of Facilities**

WTP: January 2002

WTP: Current Status

Waste Treatment Plant Construction Site
September 2005

WTP: Overall Lessons Learned

- **Baselines for very large complex technical projects should be established on at least 60% design**
  - **R&D complete/Technical risk low**
  - **Reliable quantity/unit rate information**
  - **Sufficient time between engineering and construction**
  - **Cost and schedule contingency based on project maturity and technical risk – assumptions understood and agreed to**
- **Project management strategy should be in place prior to establishing commitments**
- **Establish strong, competent DOE organization (engineering, Federal Project Directors, etc.) early in Project design phase**
- **Certified Earned Value Management System should be included in Project management/control strategy**
- **Contracts should include DOE Order 413.3 from the outset**