



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**

## **EM Program History and Overview**

Todd Shrader, Principle Deputy Assistant Secretary (EM-2)  
Office of Environmental Management (EM)

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February 24, 2020







**The EM Mission is to complete cleanup of legacy nuclear weapons development and research sites.**

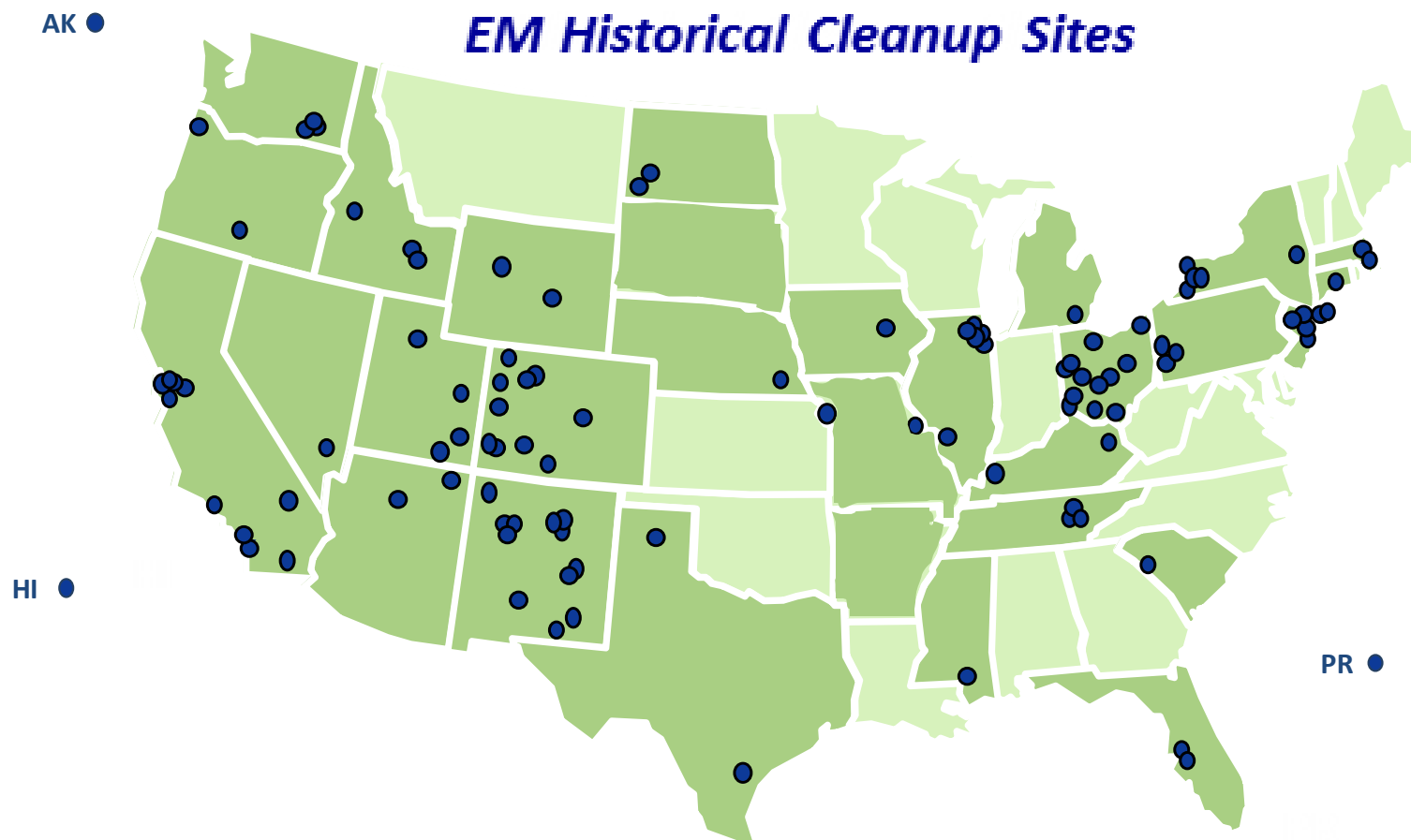
- It is the largest program of its kind in the world and represents one of the top financial environmental liabilities to the U.S. taxpayer.
- EM will continue moving forward with cleanup initiatives that benefit the Department's broader national security missions.
- EM's FY 2021 budget request provides the resources necessary to continue tangible and sustained progress in tackling the largest environmental risk across the program --- tank waste.
- EM's request reflects an effective allocation given other national priorities, to continue making strong progress in the Department's cleanup mission.



Hanford tank AP-102 preparation for waste feed delivery operations



WIPP Miners Finish Shaping New Waste Disposal Panel

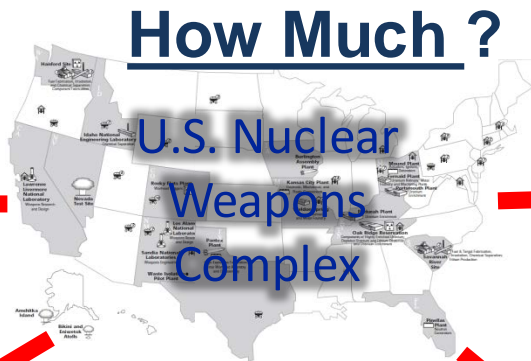


- safety ❖ performance ❖ cleanup ❖ closure*

# The Nuclear Weapons Complex Produced Both Nuclear Weapons and Contamination on a Large Scale



Over **700,000 tons** of **depleted uranium** produced as a by-product of enriching uranium to weapons grade

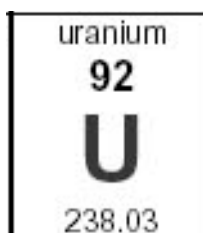


Over **5,000 facilities** contaminated as a result of activities such as reactor operations and uranium enrichment (which produce fissile material for nuclear weapons)

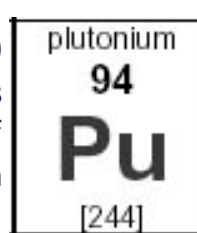


Millions of cubic meters of soil and billions of gallons of groundwater contaminated by environmental releases of radioactive and hazardous materials

Over **1,000 metric tons** of weapons-grade uranium



Over **100 metric tons** of plutonium



Tens of thousands of nuclear warheads



Over **90 million gallons** of **liquid waste** produced as a by-product of the separation of plutonium and uranium from used nuclear fuel rods



# Making Cleanup Progress



- EM has reduced its footprint by 90% to less than 300 square miles
- 17 sites in 11 states with remaining cleanup activities

# Building on Record of Success

## EM continues making measurable and meaningful progress towards cleanup completion

- At Richland, completed transfers of radioactive sludge away from the Columbia River to T Plant
- Made significant step forward with key portions of the Waste Treatment and Immobilization Plant required for the Direct Feed Low Activity Waste approach at River Protection
- Cleanup of the East Tennessee Technology Park at Oak Ridge gained headway with completion of demolition of the K-1037 Building
- Savannah River Site is on the cusp of substantially accelerating the tank waste mission as a successful 11-year demonstration of two interim salt waste processing facilities draw to a close, helping to further preparations for the startup of the Salt Waste Processing Facility
- Waste Isolation Pilot Project received its 12,500th shipment of transuranic waste for disposal and drivers exceeded 15 million safe miles without serious accident or injury
- Safely completed the 15-year process of treating all the stored debris transuranic waste at the Advanced Mixed Waste Treatment Facility in preparation for offsite disposal at Idaho
- At Portsmouth, EM achieved a critical milestone by reaching the highest operating uptime at the site's depleted uranium hexafluoride conversion plant since it began operations
- Completed disposition of waste from the demolition of the West Valley Demonstration Project vitrification plant representing another important step in the progress towards site cleanup. Crews shipped nearly 460 containers of waste by train and truck to off-site disposal facilities

**EM will not only build on these recent successes in FY20 but will bring a renewed sense of urgency to tackling cleanup challenges and driving down the third largest liability to the U.S. taxpayer.**



Hanford



Oak Ridge



Savannah River



Carlsbad



Portsmouth



- **PRIORITY #1: ACHIEVE SIGNIFICANT CONSTRUCTION PROJECT MILESTONES**
  - Start Up the Salt Waste Processing Facility
  - Start-Up the Integrated Waste Treatment Unit
  - Start Construction on the Utility Shaft at the Waste Isolation Pilot Plant
  - Complete DFLAW Construction Turn-Over to Commissioning
- **PRIORITY #2: EXECUTE KEY PROJECTS THAT ENABLE THE EM CLEANUP MISSION**
  - Complete Plutonium Finishing Plant demolition at Hanford
  - Complete demolition of TA-21 at Los Alamos
  - Complete stack removal at Brookhaven National Laboratory
  - Remove all remaining contaminated buildings at the East Tennessee Technology Park
  - Remove a cumulative 11M tons of soil/debris from Moab
  - Begin removal of remaining legacy buildings at Energy Technology Engineering Center
  - Begin demolition of the West Valley Main Plant Processing Building
  - Begin demolition of Building X-326 at Portsmouth
  - Begin demolition activities for the Pool Type Reactor at Lawrence Livermore National Laboratory

- **PRIORITY #3: REDUCE THE EM COMPLEX FOOTPRINT**
  - Disposition legacy LANL TRU waste stored at WCS
  - Complete land transfer of the Separation Process Research Unit to Naval Reactors
  - Complete transfer of the Tonopah Test Range to the Office of Legacy Management
- **PRIORITY #4: AWARD CONTRACTS THAT ENABLE ACCELERATED PROGRESS**
  - Award Contracts at Hanford, Idaho, Savannah River, Nevada, Portsmouth, and Paducah
  - Award Savannah River National Laboratory Contract
  - Award Nation-Wide Decommissioning and Demolition Contract
- **PRIORITY #5: DRIVE INNOVATION AND IMPROVED PERFORMANCE IN THE EM MISSION**
  - Complete the NEPA analysis for the SRS DWPF wastewater recycle waste stream
  - Issue an EM-wide strategic vision
  - Issue program and project management policies that drive improved performance and risk management

**EM's FY2021 budget request reflects an effective allocation, given national defense priorities, to continue making strong progress in the Department's cleanup mission.**

- Allow the Savannah River to fully utilize its tank waste treatment system and ramp-up to 24/7 operations, accelerate waste processing, and tank closure activities
- Focus on moving forward with tank waste treatment at Hanford --- completing and commissioning the facilities and infrastructure needed for the Direct Feed Low Activity Waste Approach
- Support startup and operation of Integrated Waste Treatment Unit at Idaho
- At Oak Ridge, the request supports slab and soil remediation at East Tennessee Technology Park (ETTP), continued downblending of U-233 at Oak Ridge National Laboratory (ORNL) and completing the Biology Complex demolition at Y-12
- Support continued infrastructure improvements at the Waste Isolation Pilot Plant
- Maintain successful management of groundwater contamination at Los Alamos National Laboratory
- Demolition of last remaining major facility ---- the Main Plant Process Building --- at the West Valley Demonstration Project
- Dispose of 900,000 tons of uranium mill tailings at Moab

Hanford, WA: Last of 14 Direct Feed Low-Activity Waste Buildings shift to Full Startup Testing at Hanford



Savannah River, SC: Salt Waste Processing Facility (SWPF)

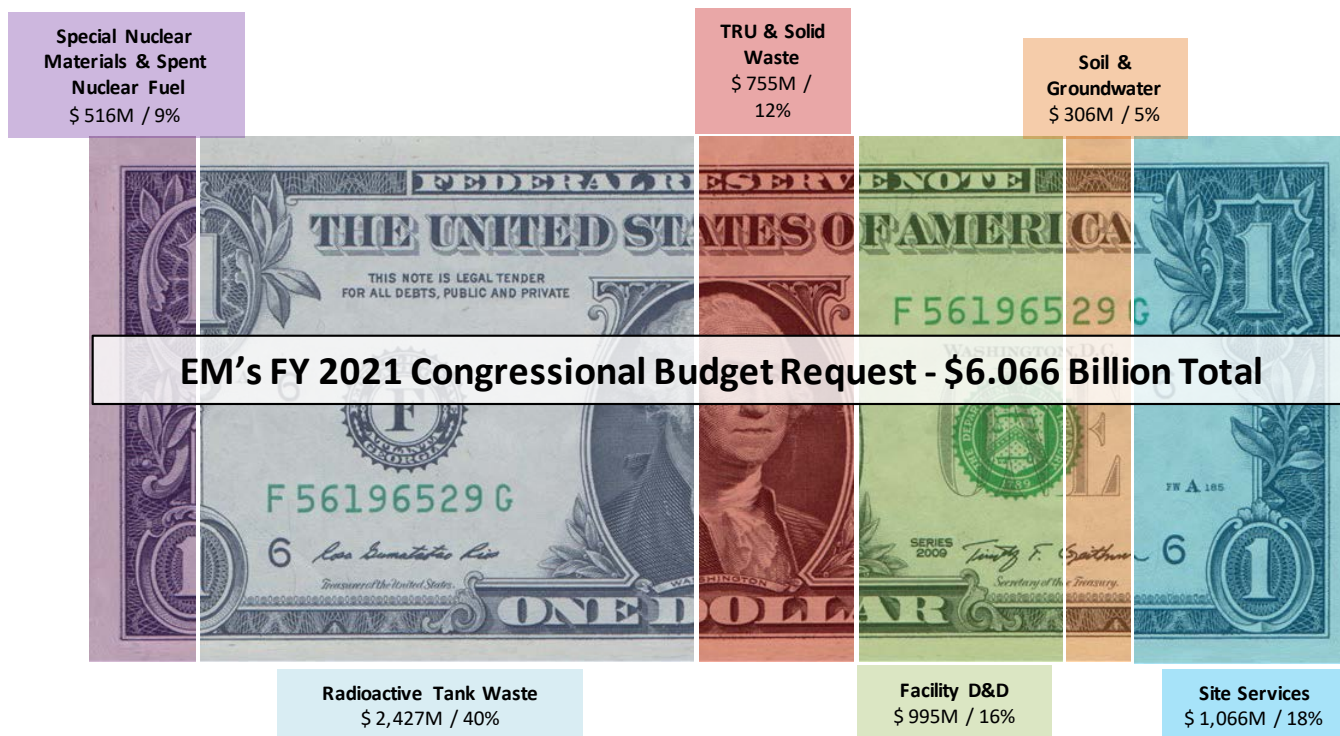


## Six Primary Mission Areas

- Key Construction Projects
- Radioactive Tank Waste
- Decontamination and Decommissioning Activities
- Special Nuclear Materials and Spent Nuclear Fuel
- Soil and Groundwater Remediation
- Transuranic Waste



# Six Primary Mission Areas





**Senior Advisor for EM  
to the Under Secretary for Science  
William White**

**EM-2 EM Principal Deputy Assistant Secretary  
Todd Shrader**

**EM-2.1 Chief of Staff  
Thomas Mooney, COS**

Correspondence Center

**Savannah River  
National Laboratory  
Policy Office**

#### EM-4

**Regulatory and Policy Affairs  
Betsy Connell, APDAS**

**EM-4.1 Infrastructure Management and  
Disposition Policy  
Kevin Collins, Director**

4.11 Infrastructure and D&D (Andy Szilagyi)

4.12 Subsurface Closure (Rob Seifert)

**Waste and Materials Management  
Mark Senderling, DAS**

4.21 National TRU Program (Betsy Forinash)

4.22 Waste Disposal (Doug Tonkay)

4.23 Nuclear Materials (Steve Schneider)

4.24 Packaging & Transportation (Julia Shenk,  
Acting)

**EM-4.3 Regulatory Intergovernmental and  
Stakeholder Engagement  
Mary Kruger, Acting Director**

4.31 Regulatory Compliance (Vacant)

4.32 Intergovernmental and Stakeholder  
Programs (Joceline Nahigian, Acting)

#### EM-3

**Field Operations  
Jeffrey Griffin, APDAS**

**EM-3.1 Safety, Security, and Quality Assurance  
Dae Chung, DAS**

3.11 Field Operations Oversight/CNS  
(Gregory Sosson, ADAS\*)

3.111 Safety Management (Joanne Lorence)

3.112 Operational Safety (Terrance Tracy)

3.113 Standards and Quality Assurance  
(Robert Murray)

3.114 Safeguards, Security, and Emergency  
Preparedness (Daniel Cardenas)

**EM-3.2 Technology Development  
Kurt Gerdes, Director**

**EM-3.3 Chief Engineer  
Vacant, Chief Engineer**

3.31 Major Constructions and Modifications  
(Vacant)

3.32 Operations and Processes  
(Vacant)

#### Field Sites

- Carlsbad
- Idaho
- Los Alamos
- Oak Ridge
- Office of River Protection
- Portsmouth & Paducah
- Richland
- Savannah River Site
- EM Consolidated Business Center

#### EMCBC Field Sites

- Moab
- ETEC
- SPRU
- West Valley
- LBNL
- Brookhaven
- EM-NV
- EM NNSA Sites (NNSS, LLNL, SNL)
- HQ Field Liaisons

#### EM-5

**Corporate Services  
Dae Chung, APDAS**

**EM-5.1 Resource Management  
Melody Bell, DAS (Acting)  
Melody Bell, ADAS**

5.11 Budget and Planning (Steve Trischman)

5.111 Budget (Mohammad Banaei, Acting)

5.112 Program Planning (Lois Jessup)

5.12 Information Systems (Jeanne Beard)

5.13 Workforce Management  
(Mary Ann Maloney)

**EM-5.2 Acquisition & Project Management  
Norbert Doyle, DAS**

5.21 Acquisition and Contract Management  
(Cris Van Horn)

5.22 Project Management (Rodney Lehman)

**EM-5.3 Communications  
Jeanne Beard, Acting Director**

5.31 External Affairs (Jeanne Beard, Acting)

5.32 Communications Services (Anita Iacarus,  
Acting)

- **EM manages its extensive cleanup mission through a series of program oversight activities to ensure mission success including:**
  - EM cleanup program policy: Contains policy requirements and best industry, GAO, and DOE practices for managing EM cleanup program
  - EM cleanup project management protocol for demolition project activities: Streamlined approach to meet DOE Order 413.3b project management requirements
  - Periodic management reviews:
    - Annual Site Reviews (FY objectives, accomplishments, funding, contracts, staffing, issues, and other pertinent areas presented to EM senior leadership)
    - Quarterly Program/Project Reviews (QPRs): Quarterly reviews with EM senior leadership on site cleanup program/project status, metrics, performance, accomplishments, milestones and issues requiring management attention
    - Site visits: Senior leadership visits to various EM sites to gauge progress, meet with staff, and provide management perspective of site cleanup mission

# Managing EM Cleanup Program (continued)

- **EM manages its extensive cleanup mission through a series of program oversight activities to ensure mission success including:**
  - Metrics and Reports:
    - Quarterly metrics updates reflecting key EM goals and objectives as well as success measures
    - Monthly EM Cleanup Program Report: Comprehensive monthly report including summary dashboard charts and data on Capital Asset Projects (CAPs) and other cleanup activities sorted by site. These reports include EVM, Corporate Performance Measures, variance analysis, trends, accomplishments, issues, and KPMs and milestone status
  - Program/Project Peer Reviews (PPR):
    - Periodic PPRs conducted by EM Office of Project Management (EM 5.22) or DOE Office of Project Management (PM) to ensure compliance with DOE O 413.3B as well as independent feedback on status and determination of success status or issues impacting meeting program/project objectives
  - Lessons Learned Bulletins (LLB):
    - EM issues monthly lessons learned bulletins on pertinent best practices, project issues and resolution, recommendations from FPDs, or industry issues. Distributed to all EM sites, offices, and leadership.