

# Lessons Learned from Small Sites Transitions

Tracy Ribeiro

U.S. Department of Energy Office of Legacy Management

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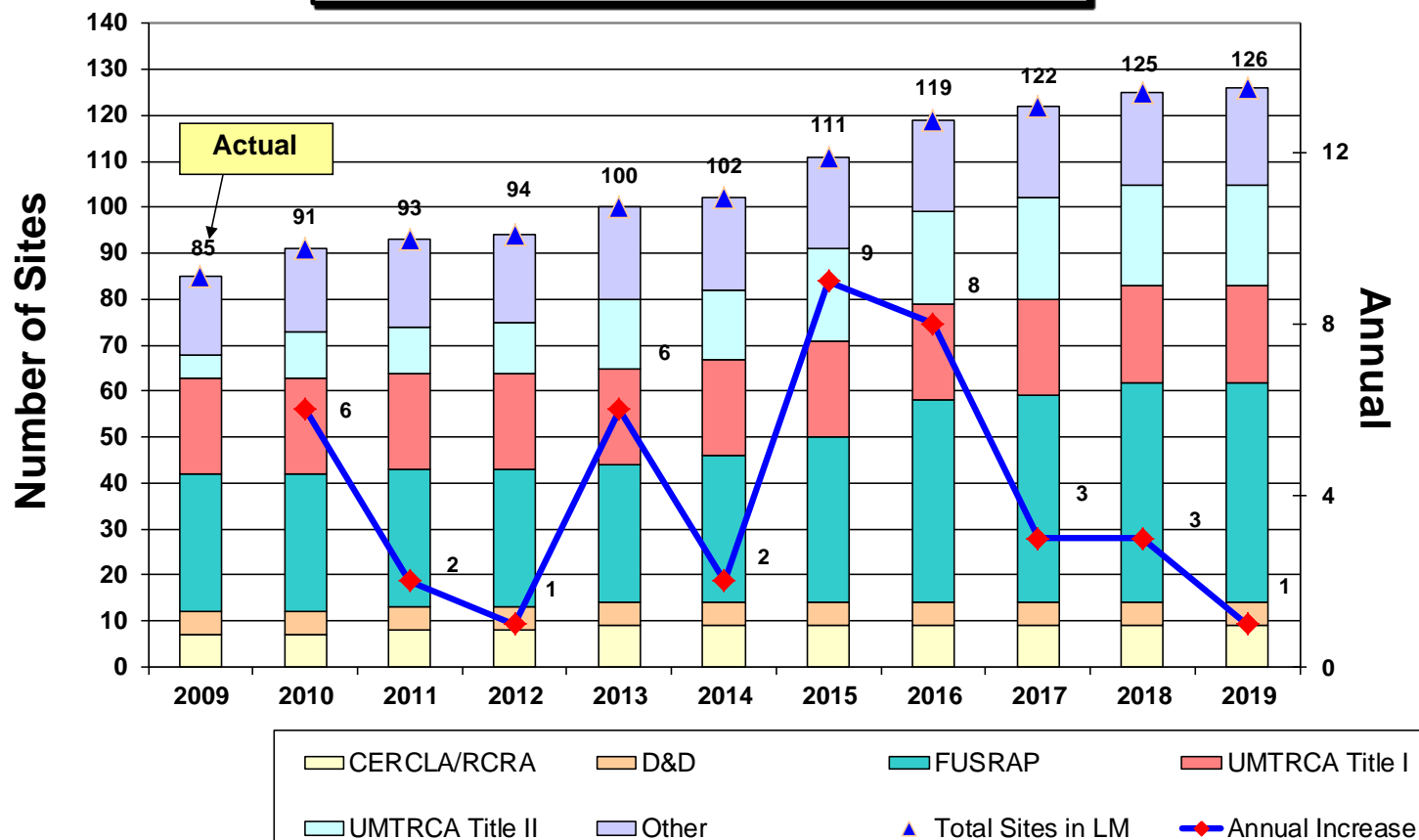
# Background

- U.S. Department of Energy (DOE) Office of Legacy Management (LM) long-term surveillance and maintenance (LTS&M)
- Sites transition from:
  - Uranium Mill Tailings Radiation Control Act (UMTRCA) Title II sites
  - Formerly Utilized Sites Remediation Action Program (FUSRAP)
  - Other DOE sites
- Each has unique transition issues
- DOE lessons learned



# LM Site Summary

## LM Planned Site Counts by Year



From *LM Site Management Guide*, June 2010

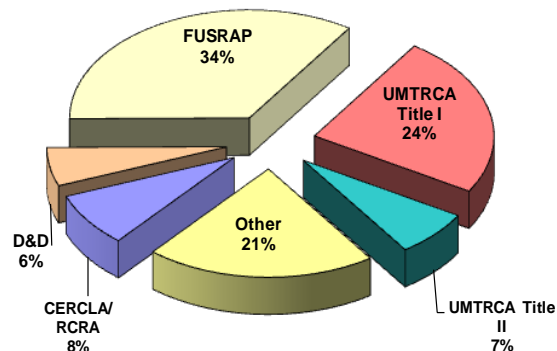


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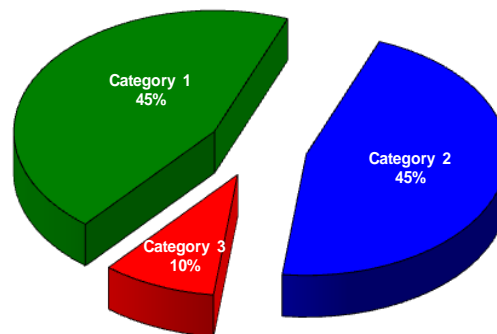
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# LM Site Characteristics

Type	Actual Thru Jun 2010
CERCLA/RCRA	7
D&D	5
FUSRAP	30
UMTRCA Title I	21
UMTRCA Title II	6
Other	18
<b>TOTAL</b>	<b>87</b>



Sites by Category thru Jun 2010	
Category 1	39
Category 2	40
Category 3	8
<b>TOTAL</b>	<b>87</b>



**Category 1 - Requires records-related activities and stakeholder support.**

**Category 2 - Requires routine inspection and maintenance, records-related activities, and stakeholder support.**

**Category 3 - Requires operation and maintenance of remedial action systems, routine inspection and maintenance, records-related activities, and stakeholder support.**

From *LM Site Management Guide*, June 2010



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# Small Sites Transition Experience

Small sites transitioned to LM since 2005

- 1 Title II site
- 3 FUSRAP sites
- 17 other sites

Common themes

- Document and confirm the remedy
- Develop and implement an LTS&M program
- Involve stakeholders



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# Objectives

- DOE long-term care objectives
- Maintain protectiveness
- Maintain regulatory compliance
- Preserve information
- Support stakeholders
- Manage DOE assets
- Promote beneficial reuse



# Desired Outcome

- Organized approach
- Identify technical and programmatic issues
- Preserve site knowledge from licensee
- Keep track of transition
- Help all parties better anticipate timing of actions
- Incorporate lessons learned to facilitate smoother transition for future sites



# Process Development

- Formal guidance for transition of weapons sites from DOE Office of Environmental Management (EM) to LM
  - DOE orders
  - LM/EM Memorandum of Understanding (MOU)
  - Site transition framework
  - Site transition checklist
- Modified process for transition of small sites





# Small Sites Transition

- Based upon large site transition process
- Site transition framework
  - Transition checklist
- Adapt to site-specific requirements
  - UMTRCA Title II sites transition process
  - DOE/U.S. Army Corps of Engineers (USACE) MOU and guidance for FUSRAP sites



# DOE Transition Approach

- Due diligence review before transition
  - Groundwater modeling and results
  - Disposal facility stability – design and performance
  - Surveillance and maintenance requirements
  - Stakeholder concerns
- Consider reuse
- Acquire complete documentation
  - Technical
    - Modeling
    - Remedy design and as-builts
  - Geospatial
  - Real property



# Transition Tools

- Process for Transition of Uranium Mill Tailings Radiation Control Act Title II Sites to the U.S. Department of Energy for Long-Term Surveillance and Maintenance (June 2009, in revision)
- U.S. Nuclear Regulatory Commission (NRC) guidance (NUREG 1620, SA-900)
- Site visits
- Detailed checklist and punch list
- Status updates and focused technical meetings



LM team visiting a Title II site  
before transition

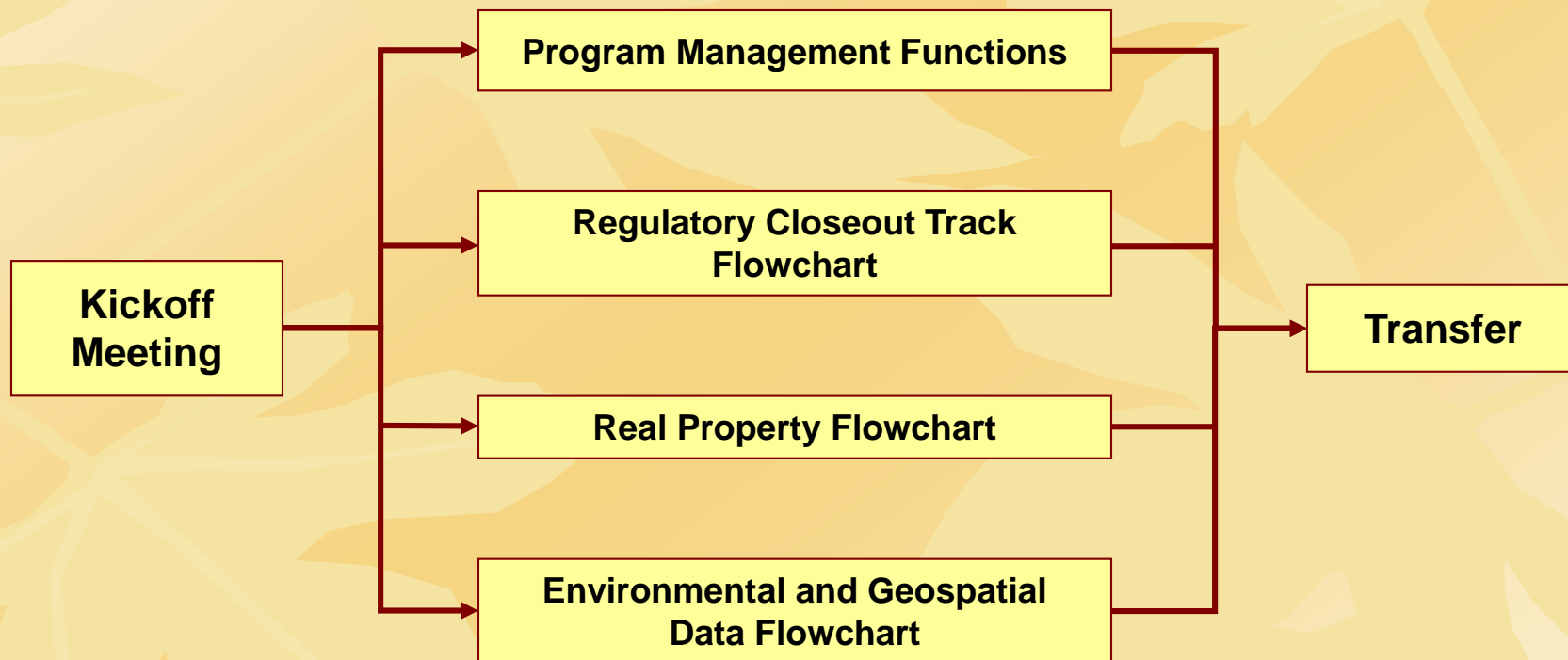


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# Transition Process

All tracks and actions converge upon transfer



# Transition Documentation

- Technical basis for remedy selection
- Remedy design and implementation
- Documentation of final conditions
- Records and information
- Risk assessment
- Regulatory concurrence
- LTS&M program



2007 dog kennel removal at the Laboratory for Energy-Related Health Research, California, Site, which transitioned to LM in 2006



# UMTRCA Title II Sites Transition

- Two-year process
- Detailed checklist and punch list
- Frequent interaction between DOE, NRC, licensee, and USACE
  - Kickoff meeting
  - Status meetings
  - Transition readiness review
- DOE prepares long-term surveillance plan and conducts real property work in time for NRC termination of specific license
- DOE process wrap-up





# Title II Sites Maintenance Issues

- Erosion at completed sites
  - L-Bar, New Mexico (Sohio), erosion repair costs \$1.6 million
- Site access
  - Windblown sand accumulation and fence maintenance at Bluewater, New Mexico, repair estimate \$81,000



Erosion (top) and erosion repair (bottom) at the L-Bar, New Mexico, Site



# Title II Sites Maintenance Issues (continued)

- Weed control
  - Required at most Title II sites
  - Annual maintenance costs average \$2,000 per site



Sand accumulation at the  
Bluewater, New Mexico, Site



Weed monitoring at the Sherwood,  
Washington, Disposal Site, where  
DOE manages listed noxious  
species using biological control





# Title II Sites Groundwater Issues

- Predictions not accurate
  - Alternate concentration limit exceeded; costs of investigation and additional wells was \$850,000
- Groundwater evaluations continue to need support
  - Bluewater, New Mexico (ARCO):
    - New Mexico Environment Department regional groundwater study
    - Off-site pumping
    - Anticipated costs of additional wells: \$675,000 plus monitoring costs



Well drilling at the Shirley Basin South, Wyoming, Site



# Other Considerations: Land Use

- Adjacent land-use changes
  - Proposed waste water disposal, Grand Junction, Colorado
  - Animas-La Plata Reservoir Project, Durango, Colorado
- Land-use changes may require unanticipated modification of access controls and surveillance requirements



The Lowman, Idaho, Disposal Site is surrounded by national forest land



The Canonsburg, Pennsylvania, Disposal Site is in an urban area



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# Evaluation and Critique

Results: evaluation of conditions at Title II sites

- Gas Hills North, Wyoming, Site
  - NRC concurred in a license amendment to remove offsite monitoring and institutional control requirements
- Panna Maria, Texas, Site
  - Licensee is remodeling site groundwater to address technical concerns about the predicted extent of the plume
- Durita, Colorado, Site
  - Licensee informed of fence encroachment and severe erosion to a drainage structure





# Evaluation and Critique (continued)

- Split Rock, Wyoming, Site
  - Licensee moved or installed monuments to correct errors in the boundary survey
- Conquista, Texas, Site
  - Licensee has presented groundwater modeling proposal to DOE and the regulator to ensure there will be no technical issues with approach
- Maybell West, Colorado, Site
  - Protocols for addressing third-party mineral rights have been resolved with NRC and the licensee
- Uravan, Colorado, Site
  - DOE is working with the licensee and regulator to establish transfer boundaries that reflect LTS&M requirements



# FUSRAP Sites Transition Process

- Annual USACE update of completion dates
- 1999 DOE/USACE MOU
- DOE reviews documentation for familiarity
- Interaction between DOE and USACE at district level
- USACE achieves regulatory closure
- Site transfers to DOE

The Tonawanda North Unit I,  
New York, FUSRAP site  
transitioned to LM in 2008



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# Transition of Other Sites

- Coordination with transferring agency
- LM will use lessons learned to guide transition

LM assumed responsibility for the former metabolic research facility at the El Verde Research Station, Puerto Rico, in 2006



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# Transition Lessons Learned

- Start early
- Conduct kickoff meeting, establish process
- Establish roles and responsibilities
- Conduct site visit, meet with remediation project staff
- Maintain frequent communication
- Acquire complete documentation
  - Electronic environmental and geospatial data
  - Real property documentation





# Transition Lessons Learned (continued)

- Evaluate engineered structures
- Evaluate potential for erosion, intrusion
- Evaluate groundwater modeling
- Understand stakeholder concerns
- Expect delays
- Conduct wrap up including a conference call regarding records and a lessons learned session





# Transition Lessons Learned (continued)



The Maybell West, Colorado, Title II site transitioned to LM in March 2010



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