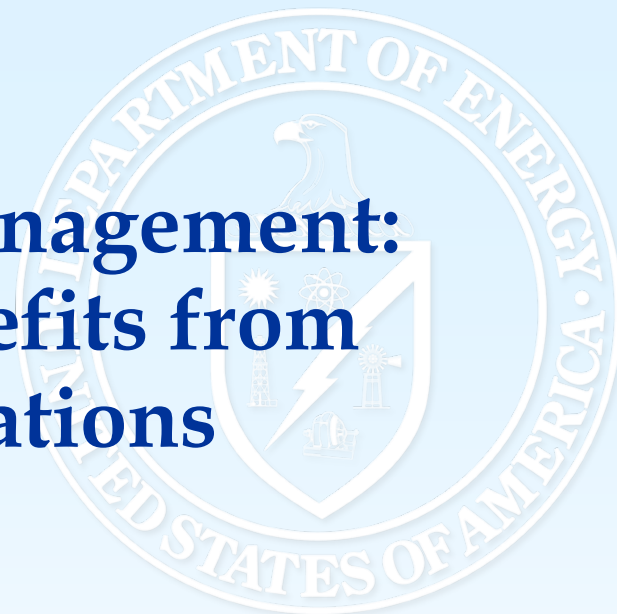


DOE Office of Legacy Management: Contributions to and Benefits from its International Collaborations



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U.S. DEPARTMENT OF
ENERGY

Legacy
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What is the mission of DOE Legacy Management (LM)?

- The major goals of LM include:
 - Ensuring that sites that have undergone regulatory closure continue to protect public health and the environment *in perpetuity*.
 - Long-term Surveillance and Maintenance (LTS&M)
 - Operation of treatment systems, primarily for groundwater
 - Currently responsible for 90 sites in the United States, including sites in Puerto Rico. An additional 30 sites are expected to transfer to LM between now and 2020.
- Preservation of records for sites and preserving institutional knowledge.
 - Future generation or people including DOE and its stakeholders will have no first hand experience when sites are operating.
- Promoting beneficial reuse of sites that are compatible with the risks that remain at sites.
 - More than 50 of LM's 90 sites have restrictions on how they can be used because of contamination left in place. However, LM sites are being used for wildlife, recreation, energy production, farming, and light industry.



LM is the only national organization in the world whose focus is on post-closure management of “legacy sites.”



How is LM contributing to International Collaborations?

- The Cold War left behind many “legacy” sites in central Asia and eastern Europe, including many uranium mining and milling sites
 - LM is managing 28 former uranium mill tailing sites in the U.S., the majority of them cleaned-up under the Uranium Mill Tailings Radiation Control Act (UMTRCA).
- **International Atomic Energy Agency (IAEA): “Regulatory Supervision of Legacy Sites” (RSLs) program**
 - A major focus of this program has been on legacy uranium mining and milling sites.
 - LM leading Work Group II, focusing on guidance on Environmental Impact Assessments, Safety Assessments, and phased approaches to addressing risks at legacy sites.
- August 2012 Technical Exchange in Grand Junction, Colorado. More than 30 participants from 20 countries.
 - Visits to EM Moab Project to see an ongoing uranium mill site remediation project.
 - Visits to an active mill, and four sites at which LM is doing LTS&M.
 - Workshop focusing on practical issues in managing legacy sites.



Other LM collaborations include:

- **Nuclear Energy Agency:** Program on “Records, Knowledge, and Memory across Generations”
 - LM contribution: Can beneficial site reuse be an effective, passive institutional control strategy for geological disposal sites?
- **WISMUT GmbH:** Largest uranium mine/mill tailings cleanup program in the world
 - Establishing a center for data information and records management similar to LM’s

Wismut guests toured the Grand Junction disposal site with LM staff and contractors. In the background is a remote telemetry system.



Fukushima Daiichi: can an end-state vision help to focus recovery? Visit to the Rocky Flats Site, Colorado, most of which will be a wildlife refuge.



In operation – 2001



Physical cleanup completion – 2005



Rocky Flats Site – 2013

How is LM benefiting from its international collaborations? Example: many countries are far ahead of the U.S. in addressing U mines.

- Most uranium mines, similar to other hard rock mines in the U.S., were established under the “General Mining Law of 1872.”
 - The 1872 law was a strategy to promote settlement of the western U.S. by Euro-Americans
 - No requirement to reclaim or remediate the mines.
- LM is responding to a 2013 National Defense Authorization Act requirement for DOE to prepare a report on the location, status, risks and hazards, and costs to reclaim or remediate abandoned mines that provide U for “defense purposes.”
- Report will be provided to Congress in July 2014.



An open-pit mine and pit lake near Lakeview, Oregon



Unsecured mine opening



Many abandoned uranium mines in the U.S. are on the Navajo Indian Nation and other tribal lands in the southwest United States.

- Other countries involved with IAEA RSLs program are also working with native people on whose land uranium mining and milling legacies exist.
 - “First Nations” in Canada
 - Aboriginal peoples of Australia
 - Ethnically native people of Central Asian Republics (e.g., Kazakhstan, Kyrgyzstan), countries that were major sources of uranium to the former Soviet Union.
- Central Asian Republics—phased approaches to managing legacy sites is only practical approach.
 - The United States has and is approaching abandoned mines in phases as well, often focusing first on safety hazards posed by them.



A timbered load-out trestle associated with a small adit in the Uravan mining area of Colorado.



Navajo hogan

LM is contributing to developing training for regulators in less developed countries to manage risks at abandoned mines



The reclaimed Radium No. 8 Pit Mine is located in DOE Uranium Lease Tract C-SR-11, near Slick Rock, Colorado.



DOE preparing a Programmatic Environmental Impact Statement for Uranium Leasing Program.

It is anticipated that reclamation/remediation of new mines in the future will be to risk-based standards.



LM and the U.S. in general has a lot to learn from other countries about preserving institutional knowledge.

- With the exception of Native Americans, people of the United States have a *very* short memory.
 - A “historic site” might be 100 years old in the U.S. We have many examples in the DOE complex of important institutional knowledge being lost in much less than 50 years.
 - “Oral history” has helped preserved customs, sites, and knowledge for thousands of years in other cultures.
 - Some LM sites will have risk *in perpetuity*. Can the U.S. as a society learn oral traditions to preserve knowledge that will protect people from risks that remain at legacy sites?
- In closing....
 - LM is benefiting from seeing first hand the technical approaches being taken to legacy sites around the world. The U.S. is a wealthy nation. We benefit from the ingenuity of countries that have much less to start with.
 - Working with people from other countries can cause one to pause. Built in biases and assumptions are tested because other societies do not necessarily share them.
 - Other perspectives are important because LM has responsibility for sites forever; a lot can happen in that time.