DOE Office of Legacy Management
Uranium Leasing Program

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The Uranium Leasing Program (ULP) began in the late 1940s, when the U.S. Atomic Energy Commission (AEC) was authorized to withdraw lands from public use to ensure an adequate reserve of uranium and vanadium ores and associated minerals for the nation’s defense program.

The ULP has administered the program through four leasing periods:

These leasing periods collectively produced a total of:
- 8.1 million pounds of uranium as $U_3O_8$
- 41.7 million pounds of vanadium as $V_2O_5$
- Generated $65 million in royalties to the federal government.
Uranium Leasing Program
Regional Location Map
Uranium Leasing Program

Lease Tract Location Map
Uranium Leasing Program

Current Status

- ULP personnel routinely (at least once a month) monitor all lessee activities.
- ULP personnel review and verify all lessee ore production records and royalty payments.
- Exploration plans were submitted in 2009 for five lease tracts; these plans were approved and exploration activities have been completed on four of the five plans.
- Two additional exploration plans were just submitted (April 2010) and are being reviewed.

Exploration Drilling C-CM-24
Uranium Leasing Program

Program Oversight Activities

- A Programmatic Environmental Assessment (PEA) was completed in June 2007 and a Finding of No Significant Impact (FONSI) was issued in July 2007 for DOE’s preferred (Expanded Program) alternative.

- 31 of the 32 existing lease tracts (25,000 acres) are leased, all located within the Uravan Mineral Belt in southwestern Colorado, and in 2008, DOE initiated its fourth leasing period.

- DOE reviews all lessee-proposed activities in accordance with the PEA and FONSI, current environmental rules and regulations, and lease stipulations to ensure that all requirements are satisfied.

- Currently, DOE receives $500,000 per year from its lessees in the form of minimum annual royalty payments. Upon resumption of mine production activities, DOE will receive production royalties from its lessees for all ores produced from the lease tracts. These production royalties could total $10 million annually if ore production reaches the levels seen historically (150,000 tons per year) in the late 1970s and early 1980s.
Environmental Litigation

  
  - Complaint includes alleged violations of National Environmental Policy Act (NEPA).
  - Complaint also alleges that the DOE Uranium Leasing Program is responsible for the resurgence of the domestic uranium industry.
  - Complaint amended in March 2010 to include alleged violations of Endangered Species Act.
Following the incorporation of expired unpatented claims into the DOE lease tracts, DOE initiated reclamation activities at legacy mine sites located on the claims.
Uranium Leasing Program

http://www.LM.doe.gov/land/sites/uranium_leasing/uranium_leasing.htm

The DOE Office of Legacy Management currently manages the Uranium Leasing Program and continues to administer 22 lease tracts, all located within the Ureana Mineral Belt in southwestern Colorado. Thirty-one of these lease tracts are actively held under lease. Administrative duties include the ongoing monitoring and oversight of leaseholders’ activities and the annual inspection of these lease tracts to identify and correct safety hazards or other environmental compliance issues.
Long-Term Surveillance and Maintenance Experience and Title II Site Transition

National Mining Association/ Uranium Recovery Workshop

Richard Bush
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May 26, 2010
DOE’s UMTRCA Experience

- Began in 1978 with first disposal cell completed in 1985 at Canonsburg, Pennsylvania
- No immediate threats to cell integrity
- Sites are stable
- Some issues have emerged
- Significant cost to DOE to address issues
- Land-use changes are anticipated
- Reuse initiatives are in progress
- This experience influences DOE transition activities
Ongoing Issues at Title I Sites

- There are no protectiveness concerns at any site
- Minor subsidence at Ambrosia Lake, New Mexico
- Rock quality at Lakeview, Oregon; monitoring at other sites
- Storm water damage at Maybell, Colorado; Shiprock, New Mexico; and Mexican Hat, Utah
Title I Sites Issues

In 2005, DOE repaired subsidence around a settlement plate on the Ambrosia Lake, New Mexico, disposal cell to restore positive drainage.

Rock size monitoring, Lakeview, Oregon, 2009
Title II Sites Maintenance Issues

- Erosion at completed sites
  - Surface hydrology assumptions not accurate at 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

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

Erosion (top) and erosion repair (bottom) at the L-Bar, New Mexico, site
Title II Sites Groundwater Issues

- Predictions not accurate
  - ACL exceedences at Shirley Basin South, Wyoming (Petrotomics), 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
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
Other Considerations: Reuse

- Solar electricity production
  - Tuba City, Arizona (51 kW)
  - Durango, Colorado (up to 4 MW proposed)
- City of Rifle Waste Water Reclamation Facility
- Conservation areas
- Maintain pre-transition grazing and wildlife use

Photovoltaic solar generation went online at the Tuba City, Arizona, site in April 2010
DOE Transition Approach

- Due diligence review before transition
  - Groundwater modeling and results
  - Disposal cell stability – design and performance
  - On- and off-cell maintenance requirements

- Consider reuse

- Acquire complete documentation
  - Technical
    - Plant operations, treatment system, monitoring, design, and construction
  - Geospatial
  - Real property
Transition Process

- Process for Transition of UMTRCA Title II Disposal Sites to U.S. Department of Energy for Long-Term Surveillance and Maintenance, June 2009
- Two-year process
- Detailed checklist and punch list
- Frequent interaction between DOE, Nuclear Regulatory Commission (NRC), licensee, and U.S. Army Corps of Engineers
  - Kick-off meeting
  - Status meetings
  - Transition readiness review
Long-Term Care Fee

- DOE estimates surveillance and maintenance costs for out-year planning, which include
  - Surveillance
    - Annual inspection and reporting per license requirements; monitoring per approved groundwater remedy
  - Routine maintenance
    - Roads to access wells and fences to protect cell covers; noxious and invasive weed control per State regulations
  - Service-life and replacement-cost estimates for wells, fences, and other structures and site surveillance features (e.g., signs and markers)
  - Non-routine maintenance or compliance issues
    - Erosion repair from storm damage has been required at one LM site per year
    - DOE generally cannot predict when or where these situations will occur so this isn’t included in cost estimate for a given site but should be considered likely to occur at a future point in time at every site

- DOE recently provided the scope and cost estimate for long-term care of a transitioning site to NRC

- Estimated scope usually exceeds Scenario 1 assumptions in NUREG 0706, which is the basis for the base fee of $250,000 in 1978 dollars
In Summary…

- Disposal cells are as much as 25 years old
- Sites are stable and require no extraordinary intervention
- Maintenance costs often exceeded initial estimates
- DOE has better basis for out-year planning that now includes actual historical costs over time, and $250,000 in 1978 dollars is not adequate to cover future costs in many cases
- DOE is conducting technical evaluations of sites before transition, in coordination with NRC and licensees