Status of Legacy Mill Cleanup

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Decommissioning and Uranium Recovery Licensing Directorate
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Office of Federal and State Materials and Environmental Management Programs
Outline:

- NRC’s Responsibility
- Statutory Basis
- Decommissioning Standards
- Roles and Responsibilities at Title I Sites
- Title I Sites in New Mexico
- Roles and Responsibilities at Title II Sites
- Historical Perspective on Oversight at Title II Sites
- Title II Sites in New Mexico
- Recent Activities Related to Decommissioning Sites in New Mexico
NRC’s Responsibility:

- Regulatory oversight for milling activities; no authority over mining of uranium
  - URANIUM MILLING - “Any activity that results in the production of byproduct material…”
  - BYPRODUCT MATERIAL - “The tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content…”
Statutory Basis:

  - TITLE I: Remedial action at inactive, abandoned, unlicensed sites
  - TITLE II: Licensing/Oversight/Remediation of uranium recovery facilities licensed by the NRC or an Agreement State in or after 1978
Decommissioning Standards:

- 40 CFR 192:
  - Soil and Buildings:
    - 5 pCi/g averaged over the first 15 cm
    - 15 pCi/g averaged over 15 cm more than 15 cm below surface
  - Radon:
    - 20 pCi/m$^2$/sec
  - Ground water:
    - Background or maximum contaminant level whichever is lower, or
    - Alternate concentration limit
Roles and Responsibilities at Title I Sites:

- EPA establishes standards for cleanup and disposal of contaminated material
- DOE identifies and remediates all Title I sites to EPA standards
- DOE also remediates vicinity properties
- NRC evaluates and concurs in DOE’s site remediation plans and concurs that site remediation has been adequately completed
- DOE becomes the long-term site custodian under NRC General License
Title I Sites in New Mexico

– SHIPROCK
  • Active groundwater remediation ongoing in 2 areas of the site
  • Will meet with DOE in the Fall to discuss modification to the GCAP

– AMBROSIA LAKE
  • Site under long-term care/surveillance by DOE
  • No major issues
Roles and Responsibilities at Title II Sites:

- EPA establishes standards for cleanup and disposal of byproduct material
- NRC or Agreement State reviews license applications, issues license, conducts inspections, and oversees decommissioning to EPA standards
- NRC reviews and concurs on DOE’s Long Term Surveillance Plans for conventional mills
- NRC or the Agreement State terminates specific license
- NRC concurs in Agreement State license termination
- DOE becomes the long-term site custodian under NRC General License
Historical Perspective on Oversight at Title II Sites:

- New Mexico became an Agreement State in 1974
- Uranium Mill Tailings Radiation Control Act - 1978
- Homestake and Church Rock Mill sites designated Superfund sites due to leaking tailings impoundments - 1983
- NRC assumes regulatory authority - 1986
- Final NRC regulations at 10 CFR Part 40, Appendix A promulgated in 1985 (no ground water), amended 1987
Title II Sites in New Mexico:

- **ARCO-Bluewater – DOE General License**
  - Surface reclamation completed in 1995
  - NRC approved groundwater ACLs for Ur, Mo, and Se IN 1996
  - License terminated in 1997
  - Site under DOE long-term care/custody

- **Homestake-Grants – Decommissioning**
  - EPA superfund site
  - Surface reclamation complete
  - Groundwater restoration ongoing – NRC approved expanded evaporation pond in August 2008
  - License termination expected in 2017

- **Rio Algom-Ambrosia Lake – Decommissioning**
  - Surface reclamation nearly complete
  - Groundwater reclamation completed in 2001
  - License termination expected in 2011
Title II Sites in New Mexico (cont.):

- **UNC Church Rock – Decommissioning**
  - EPA superfund site
  - Surface reclamation nearly complete
  - Groundwater restoration ongoing
  - Potential site for disposal of Northeast Church Rock mine tailings
  - License termination – TBD

- **L-Bar – DOE General License**
  - Surface reclamation completed in 2000
  - NRC approved groundwater ACLs for Ur and Se in 1999
  - License terminated in 2004
  - Site under DOE long-term care/custody

- **HRI-Crown Point – In-situ Recovery Facility**
  - License issued in 1998
  - HRI is appealing the court decision that part of the Church Rock site is “Indian Land”
Recent Activities Related to Decommissioning Sites in New Mexico:

- Participated in 5-Year Plan on Uranium Contamination on Navajo Lands - Continuing
- Facilitated meeting with Federal and State Agencies on mill contamination - Jan. 2009
- Met with EPA Regions 6 & 9 on UNC Church Rock and Homestake issues - March 2009
- Participated with State, other Federal Agencies, and Native American Tribes in UNC Church Rock site visit - May 2009
- Organized meeting with DOE, EPA Region 6 & 9, Native American Tribes, and NMED on UNC Church Rock issues - May 2009
- Participated in Grants Mineral Belt Partnership meetings - April, June, & August 2009
PLANNED URANIUM RECOVERY FACILITIES

- NEUTRON ENERGY – MARQUEZ (MARCH 2010)
- RIO GRANDE RESOURCES – MT. TAYLOR (APRIL 2010)
- STRATHMORE MINERALS CORPORATION – ROCA HONDA (SEPTEMBER 2010)
- URANIUM ENERGY CORPORATION – GRANTS RIDGE (JANUARY 2011)
New Uranium Recovery Applications

Keith I. McConnell

Deputy Director for Decommissioning and Uranium Recovery Licensing
Division of Waste Management & Environmental Protection
Office of Federal and State Materials and Environmental Management Programs
Public Participation

• Opportunity to Request a Hearing
  – After acceptance review is completed

• Environmental Review Process
  – Information gathering
  – Public Comment on DSEIS

• Government to Government Coordination
Status of Applications

• 27 Applications expected FY2007 – FY 2012
• New Facility Applications - 17
  – 5 Acceptance Reviews Complete
  – 0 Acceptance Reviews in Progress
  – 5 Technical Reviews in Progress
• Expansions/Restarts - 10
  – 2 Amendment Issued
  – 1 Technical Reviews in Progress
### Expected Uranium Recovery Facility Applications / Restarts / Expansions

<table>
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<tr>
<th>Company</th>
<th>Site</th>
<th>Design type</th>
<th>Estimated Application Date</th>
<th>State</th>
<th>Letter of Intent</th>
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**6 year projected total reviews = 27**

**Total Uranium Recovery Applications Received = 8**
**Total New Uranium Recovery Applications = 17**
**Total Restart/Expansion Uranium Recovery Applications = 10**