

US EPA ARCHIVE DOCUMENT



Status of Legacy Mill Cleanup

Lydia Chang, Chief

*Special Projects Branch
Decommissioning and Uranium Recovery Licensing
Directorate*

*Division of Waste Management & Environmental Protection
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:

- **Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA).**
 - **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/m²sec
 - **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
- Milling activities at UNC-Church Rock, Homestake-Grants, ARCO-Bluewater, and Rio Algom-Ambrosia Lake took place – 1953-1982, 1957-1990, 1953-1982, and 1958-2002, respectively
- Uranium Mill Tailings Radiation Control Act - 1978
- EPA standards at 40 CFR 192 promulgated in 1983, amended 1987
- 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
- Participated in the International Institute for Indigenous Resource Management workshop on: American Indian Tribes, Canadian First Nations, and the Production of Uranium - July 2009



Questions?



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)**

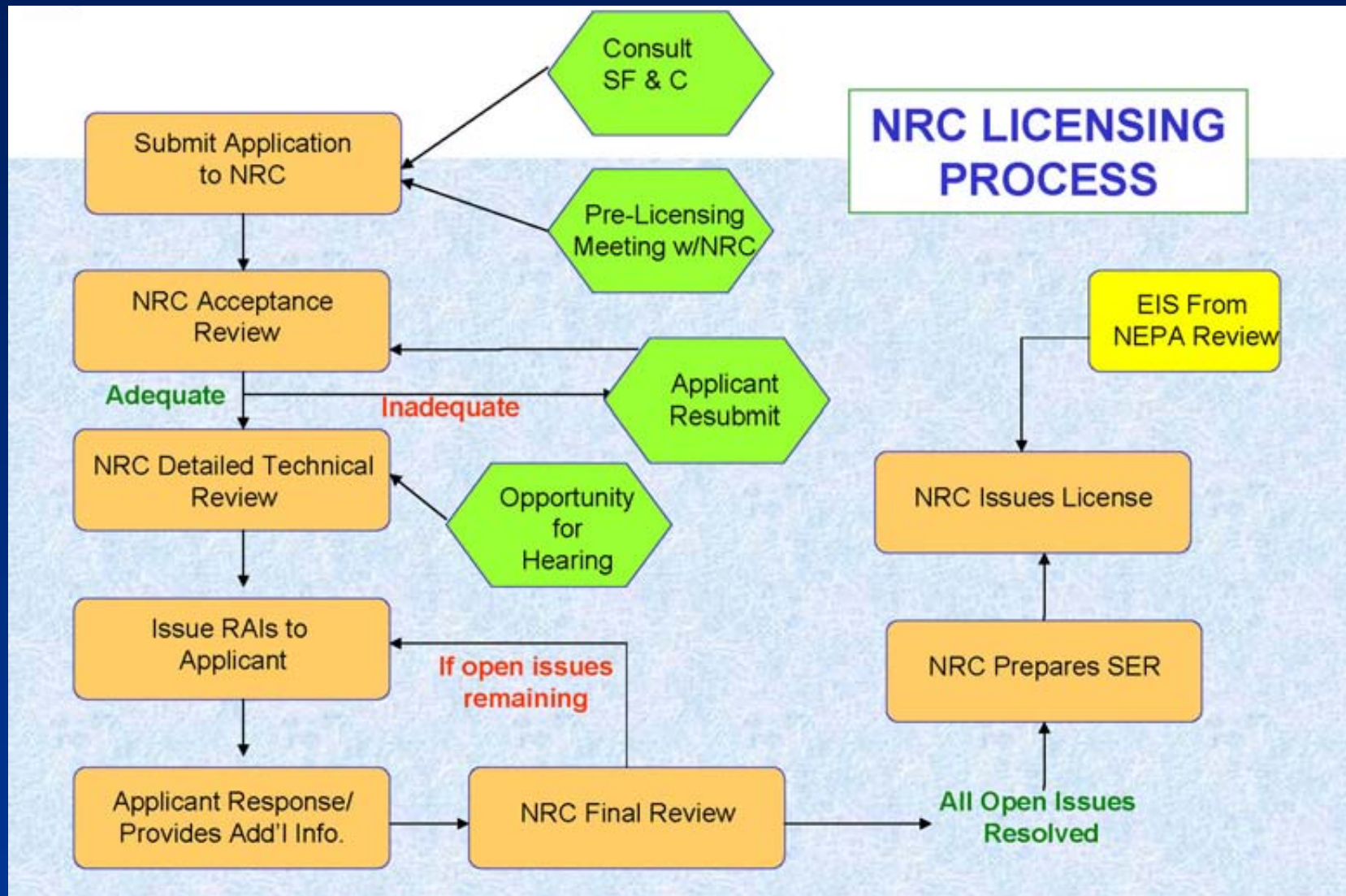


New Uranium Recovery Applications

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					
Company	Site	Design type	Estimated Application Date	State	Letter of Intent
Fiscal 2007 Applications					
Cogema	Christensen Ranch	ISR - Restart	Rec. 4/07, Comp. 9/08	WY	None
Cameco (Crow Butte Resources, Inc.)	North Trend	ISR - Expansion	Received June 2007	NE	None
Cameco (Crow Butte Resources, Inc.)	Plant Upgrade	ISR - Expansion	Rec. 10/06, Comp. 12/07	NE	None
Fiscal 2008 Applications					
Lost Creek ISR, LLC	Lost Creek	ISR - New	Resubmitted Mar 2008	WY	05/23/07
Uranerz Energy Corp.	Hank and Nichols	ISR - New	Received December 2007	WY	06/27/07
Uranium One (Energy Metals Corporation)	Moore Ranch	ISR - New	Received October 2007	WY	05/31/07
Uranium One (Energy Metals Corporation)	Jab and Antelope	ISR - New	Received September 2008	WY	05/31/07
Fiscal 2009 Applications					
Powertech Uranium Corporation	Dewey Burdock	ISR - New	Received 2/27/09	SD	01/26/07
Fiscal 2010 Applications					
Uranium One (Energy Metals Corporation)	Ludeman	ISR - New	Oct-09	WY	02/26/09
Lost Creek ISR, LLC	Lost Creek	ISR - Expansion	Apr-10	WY	03/21/08
UR-Energy Corp.	Lost Soldier	ISR - Expansion	Apr-10	WY	03/02/09
Uranium One (Energy Metals)	Allemand-Ross	ISR-Expansion	Dec-09	WY	02/26/09
Neutron Energy	Marquez	Conv. - New	Mar-10	NM	03/25/08
Cameco (Crow Butte Resources, Inc.)	Three Crow	ISR - Expansion	Mar-10	NE	03/04/09
Rio Grande Resources	Mt. Taylor	Conv. - New	Apr-10	NM	03/21/08
Fiscal 2011 Applications					
Concentric	Yavapai County	Conv. - New	Oct-10	AZ	03/20/08
Peninsula Minerals, Ltd.	Ross	ISR - New	Dec-10	WY	10/05/09
Strathmore Minerals Corporation	Reno Creek	ISR - New	Mar-11	WY	03/18/09
Cameco (Power Resources, Inc.)	Smith Ranch/Highland CPP	ISR - Expansion	FY 2011	WY	03/20/08
Wildhorse Energy	West Alkali Creek	ISR - New	Dec-10	WY	03/20/08
Uranium Energy Corporation	Grants Ridge	Heap Leach - New	Jan-11	NM	02/22/08
Wildhorse Energy	Sweetwater	ISR and Conv. - New	May-11	WY	-
Fiscal 2012 Applications					
Cameco (Power Resources, Inc.)	Ruby Ranch	ISR - Expansion	Oct-11	WY	03/20/08
Strathmore Minerals Corporation	Gas Hills	Conv. - New	Oct-11	WY	03/18/09
Strathmore Minerals Corporation	Roca Honda	Conv. - New	Dec-11	NM	03/18/09
Cameco (Crow Butte Resources, Inc.)	Marsland	ISR - Expansion	Sep-12	NE	03/04/09
Uranium King Corporation	Apex Mill	Conv. - New	To Be Determined	NV	09/27/08
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					