

EPA Uranium Program Update

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2007 NMA/NRC Uranium
Recovery Workshop



Overview

- EPA Radiation protection program
- Uranium reports and abandoned mine lands program
- Coordination with NRC rulemakings
- EPA uranium regulation reviews
- EPA regulatory requirements for uranium operations



EPA Radiation Protection Program

- Specific Atomic Energy Act radiation protection authorities and responsibilities assigned to EPA under Reorganization Plan No. 3 in 1970; and
- Environmental statute authorities; examples include
 - UMTRCA
 - Clean Air Act
 - Clean Water Act
 - Safe Drinking Water Act
 - Toxic Substances Control Act
 - Comprehensive Environmental Response, Compensation and Liability Act
 - WIPP Withdrawal Act
 - Energy Policy Act of 1992: Yucca Mountain radiation protection standards



EPA Radiation Protection Program

- Programs include:
 - TENORM, low-level and mixed waste management
 - National Emission Standards for Hazardous Air Pollutants – radiation standards
 - Radiological emergency preparedness
 - Radiation site cleanup
 - Science and risk assessment, including Federal radiation protection guidance
 - Radiation information
 - WIPP and Yucca Mountain regulation/standards setting



Goal of TENORM Program

- Minimize exposures where natural sources of radioactivity are concentrated in the environment, or made more accessible due to human activities.



Uranium Mining TENORM Report I

- *Technologically Enhanced Naturally Occurring Radioactive Materials from Uranium Mining, Volume I: Mining and Reclamation Background*
 - Available as bound copy, CD-ROM version and on the Internet at:
<http://www.epa.gov/radiation/pubs.htm/tenorm>
- CD-ROM version includes past EPA studies on uranium mine wastes (1983, 1985, 1995)
- Requests for copies can also be made to:
 - radiation_questions@epa.gov



Uranium Mining TENORM Report II

- *Technologically Enhanced Naturally Occurring Radioactive Materials from Uranium Mining, Volume II: Investigation of Potential Health, Geographic and Environmental Issues From Abandoned Uranium Mines*
 - Undergoing revision after peer review
- To obtain a copy for comment on the Internet:
<http://www.epa.gov/radiation/tenorm/index.html>



Uranium Location Database

- Compilation of Federal and State sources
- Production records document ~4,000 mines vs. Uranium Location Database ~15,000 records
- A digital GIS database product can be requested at:
– radiation.questions@epa.gov



Uranium AML Program (1)

- **Identify and characterize abandoned uranium mine risks**
 - Database
 - Add new data set on closed mines
 - Human Risk assessment
 - Provide assistance to EPA regions, federal, state, Tribal agencies as requested
 - Ecological assessment
 - Collect additional data, provide assistance to EPA regions, others



Uranium AML Program (2)

- **Reduce risks from contaminated buildings**
 - Navajo
 - Other Tribes/areas with contaminated buildings
 - Develop educational materials



Uranium AML Program (3)

- **Participate in activities that reduce risks from uranium mines on federal lands**
- **Guidance (non-CERCLA) on when, and to what level to reclaim sites**
 - Site assessments as requested
 - Ecological assessments as requested
- **Stakeholder meetings**



EPA Coordination with NRC Rulemakings—Uranium ISL Groundwater Protection

- Following NRC request to EPA on standards to use for proposed rulemaking on uranium ISL groundwater protection
 - EPA sent written response in August 2006, then met with NRC staff and management multiple times in 2006 and 2007 to discuss both agencies' positions on groundwater protection standards and programs
 - EPA attended public meetings with NRC staff and management and NMA June 2006, March 2007



EPA Coordination with NRC
Rulemakings—Uranium ISL
Groundwater Protection

- EPA policy on ISL groundwater protection:
 - EPA regulations generated in accordance with UMTRCA (40 CFR 192) provide the appropriate standards to be used by NRC for groundwater protection
 - UMTRCA mandated utilization of environmental standards developed under the Solid Waste Disposal Act (now RCRA) to the maximum extent possible



EPA Coordination with NRC
Rulemakings—Uranium ISL
Groundwater Protection

- EPA policy on ISL groundwater protection (continued):
 - EPA's UIC regulations promulgated under the Safe Drinking Water Act (40 CFR 146) provide standards which must be followed by ISL injection well applicants, but are supplemental and independent of the requirements developed under UMTRCA



EPA Coordination with NRC
Rulemakings—Uranium ISL
Groundwater Protection

- Under UMTRCA (and RCRA), restoration of groundwater in wellfield must be to (1) background, or (2) for particular constituents, Maximum Contaminant Levels (MCL's); or (3) if established, Alternate Concentration Limits (ACLs)



EPA Coordination with NRC Rulemakings—Uranium ISL Groundwater Protection

- **ACLs must be determined on a case-by-case basis and meet ALARA. EPA concurrence required**
 - Class of use is not an approved provision under UMRCA/RCRA for meeting ACL's and ALARA
 - However, class of use could be considered as one input in determining final ACLs



EPA Coordination with NRC Rulemakings--NARM

- **Energy Policy Act of 2005 created a new classification of byproduct material which includes:**
 - 1) any discrete source of radium-226 that is produced, extracted, or converted ...for use for a commercial, medical, or research activity;
 - (2) any material that has been made radioactive by use of a particle accelerator and is produced, extracted, or converted after extraction..., for use for a commercial, medical, or research activity; and



EPA Coordination with NRC Rulemakings--NARM

- (3) any discrete source of naturally occurring radioactive material, other than source material, that the Commission, in consultation with ...[EPA, DOE, DHS, and other Federal agencies] determines would pose a threat similar to the threat posed by a discrete source of radium-226 and that is extracted or converted ...for use in a commercial, medical, or research activity.



EPA Coordination with NRC Rulemakings--NARM

- EPA provided input to NRC definition of "discrete" NORM
- Identification of other materials similar to discrete sources of Ra-226 which could pose security threat
- Commented on draft rule
- Will coordinate with NRC regarding legacy sites



EPA Coordination with NRC Rulemakings—Drinking Water Treatment Facilities

- Evaluation of NRC licensing/exemption rule for drinking water treatment plants
 - EPA has provided information to NRC in evaluation of their proposed rulemaking
 - Will provide assistance and participation with NRC Jurisdictional Working Group
 - EPA has conducted radiological surveys of selected community water systems, will be evaluating issuance of further occupational information



EPA Uranium Regulation Reviews

- EPA will continue to work with NRC as they move forward to develop their proposed ISL groundwater protection rule. Under UMTRCA, EPA must concur with any NRC proposed standards for uranium extraction facilities
- EPA is also considering appropriate options for two sets of uranium related regulations:
 - Updating UMTRCA 40 CFR 192
 - Reviewing Clean Air Act standards 40 CFR 161 Subparts B and W for underground uranium mines and mill tailings impoundments



EPA Regulatory Requirements For Uranium Operations

- 40 CFR 192 regulations implementing UMTRCA for environmental and radiation protection
- 40 CFR 144 implementing the SDWA groundwater standards for ISL UIC injection wells
- 40 CFR 440 Part C implementing the Clean Water Act with requirements for environmental limitations on discharges from uranium mines and mills
- 40 CFR 161 Parts B and W regulations limiting radon emissions from underground uranium mines and uranium mill tailings impoundments




