

# Developing a General License for Treatment of Uranium in Drinking Water

---

*Gary Comfort*

*U.S. Nuclear Regulatory Commission (NRC)*

*Office of Nuclear Material Safety and Safeguards*

*(301) 415-8106*

*gcc1@nrc.gov*



***NMA/Nuclear Regulatory Commission Uranium  
Recovery Workshop***

*June 28, 2006*

# A Review

- **July 9, 1976 Rule**

- Set Ra 226/228, gross alpha, beta particles and photon emitter MCLs

- **December 7, 2000 Rule**

- Community Water Systems
- Effective Dec. 8, 2003
- Initial monitoring must be completed by Dec. 31, 2007
- Set a new standard for uranium and revised monitoring requirements for Ra 226/228, gross alpha, beta particle and photon emitters
- Compliance at the entry point to the distribution system

## **Radionuclide MCLs**

<b>Ra226/ Ra228</b>	<b>5 pCi/L</b>
<b>Gross alpha particle</b>	<b>15 pCi/L</b>
<b>Uranium (new MCL)</b>	<b>30 ppb</b>
<b>Beta/photon emitters*</b>	<b>4 mrem/year</b>

\*A total of 179 individual beta particle and photon emitters may be used to calculate compliance with the MCL

# Characteristics and Contaminant Concentrations Vary According to:

- ✓ Concentration of radionuclides in source water
- ✓ Efficiency of treatment in removing radionuclides
- ✓ Frequency of regeneration (for ion exchange [IX] and activated alumina [AA])
- ✓ Frequency of filter backwash (for treatment methods using granular media filters)
- ✓ Frequency of IX resin, AA media, granular filter media, or membrane replacement
- ✓ Loading to the treatment unit (rate, throughput)

# NRC's Jurisdiction

- **Atomic Energy Act of 1954, as amended**
  - Defines Source Material
  - Limits to “after removal from its place in nature”
- **10 CFR Part 40, “Source Material”**
  - NRC's regulations for source material

# Existing Methods of Regulation

- **Exemptions**

- <0.05 percent by weight (10 CFR 40.13(a))
- Unprocessed source material (10 CFR 40.13(b))

- **General License (10 CFR 40.22)**

- <15 pounds at one time
- <150 pounds per year
- Exempt from requirements of 10 CFR Parts 19, 20, 21
- No reporting requirements

# Existing Methods of Regulation

*(cont)*

- **Specific Licensing**

- Very comprehensive oversight
- Requires application and issuance of license
- Can be resource intensive for applicants and regulatory agencies

# Regulatory Considerations

- **Benefit of Clean Drinking Water**
- **Expected Minimal Impact to Health and Safety**
- **Most Drinking Water Facilities Have Experience Working With Hazardous Materials**
- **Processing in Response to Another Agency's Requirements**
- **Resource Costs**
- **Does Not Generate 11(e)(2) byproduct material**



# Proposed Activities

- **New General License**

- Specific to drinking water treatment facilities
- Focus on storage and disposal requirements
- Will solicit active participation from States, EPA, industry, and public

# Proposed Activities

- Examples of Issues Under Consideration in General License
  - Disposal Requirements
  - Registration/Reporting Requirements
  - Process and Onsite Storage Restrictions
  - Decommissioning Financial Assurance
  - Response to Accidents

# Proposed Activities

- General License Rulemaking Schedule
  - Proposed Rule Available for Public Comment:  
Spring 2007 (75 day comment period)
  - Final Rule Issued:  
Early 2008

# Proposed Activities

- **Enforcement Discretion**

- Only until rulemaking is completed
- Generic communication describing expectations
  - Expect to Issue in Fall 2006

# Background Information

- **SECY-06-0049, “Actions Related to Regulation of Maximum Contamination Levels for Uranium in Drinking Water”**