Status Update on the 10 CFR Part 61 Low-Level Radioactive Waste Disposal Rulemaking:

Gregory F. Suber
Division of Decommissioning, Uranium Recovery, and Waste Programs
Office of Nuclear Materials Safety and Safeguards

March 16, 2015
Waste Management Symposium
Phoenix, AZ
Overview

• Initial Commission Direction
  • SRM-SECY-08-0147 (March 2009)
  • SRM-SECY-10-0043 (October 2010)
  • SRM-COMWDM-11-0002-COMGEA-11-0002 (January 2012)

• Final Commission Direction
  • SRM-SECY-13-0075 (February 2014)

• Current Rulemaking Status
Commission Direction

• SRM-SECY-08-0147:
  – Require site-specific analysis for disposal of large quantities of DU
  – Specify the technical requirements required for the site-specific performance assessment
  – Develop regulatory guidance to assist licensees and applicants in completing the new requirement

• SRM-SECY-10-0043:
  – Incorporate blending issue into the existing rulemaking for DU
Draft Rule Text

• Developed Initial Draft Rulemaking Package (Fall 2011)
  • Performance assessment requirement for the protection of general population (10 CFR 61.41)
    ➢ 20,000-year period of performance (quantitative)
    ➢ Post 20,000-year evaluation to peak dose
  • Intruder assessment requirement for the protection of inadvertent intruder (10 CFR 61.42)
    ➢ 500 mrem dose limit to intruder
Commission Direction

- SRM-COMWDM-11-0002/COMGEA-11-0002
  - Flexibility to use current International Commission on Radiological Protection (ICRP) dose methodologies
  - Two-tiered period of performance:
    - **Tier 1**: Compliance period covering reasonably foreseeable future
    - **Tier 2**: Longer period based on site characteristics and peak dose to a designated receptor, that is not *a priori*
  - Flexibility to establish site-specific waste acceptance criteria (WAC) based on the results of the site’s performance assessment and intruder assessment
  - Balance Federal-State alignment and flexibility with respect to compatibility
• Revised Draft Proposed Rule Package Draft proposed rule and accompanying guidance
document provided to Commission: July 2013

• Performance assessment requirement for the protection of general population (10 CFR 61.41)
  ➢ 10,000-year period of performance (quantitative)
  ➢ Post 10,000-year evaluation to peak dose

• Intruder assessment requirement for the protection of inadvertent intruder (10 CFR 61.42)
  ➢ 500 mrem dose limit to intruder

• Requirement to develop site-specific WAC based on the site-specific analyses or waste classification tables
SRM-SECY-13-0075

• Commission issued SRM-SECY-13-0075 on February 12, 2014 (ADAMS ML14043A371) that identified 15 items (comments and changes)
• Comments can be grouped as follows:
  - Period of performance (SRM items 1, 4, 7, and 8)
  - Safety case and defense-in-depth protections (SRM item 9)
  - Intruder assessment (SRM items 3 and 6)
  - Agreement State compatibility (SRM item 2)
  - Outreach (SRM items 5, 10, 11, and 12)
  - Other (SRM items 13, 14, and 15)
• Provide revised draft proposed rule by February 2015.
  - Requires proposed rule language change from SECY-13-0075
SRM: Period of Performance
Commission directs the staff to include three tiers:

**2-tier approach**

- Performance Period:
  - No dose limit

- Compliance Period:
  - 25 mrem/yr dose limit
  - Protection of general population (10 CFR 61.41)
  - Protection of inadvertent intruder (10 CFR 61.42)

**3-tier approach**

- Performance Period:
  - No dose limit

- Protective Assurance Period:
  - 500 mrem/yr analytical threshold
  - Site Closure

- Compliance Period:
  - 25 mrem/yr dose limit
  - Protection of general population (10 CFR 61.41)
  - Protection of inadvertent intruder (10 CFR 61.42)
SRM: Safety Case and Defense-in-depth

- Proposed rule should include discussion of safety case and defense-in-depth (DID) protections
- Explain how the combination of DID and performance assessment should be used to support licensing decision, and make conforming changes throughout the rulemaking package
SRM: Intruder Assessment

• Require a 10,000 year intruder assessment analysis

• Based on intrusion scenarios that are realistic and consistent with expected activities in and around the disposal site at the time of site closure
Next Steps

February 2014
- Revise draft proposed rule
- Revise guidance document

Commission
- Submit to Commission
- Prepare for public comment

Outreach
- Meetings and comments
- Review guidance with stakeholders

February 2015

SRM-SECY-13-0075