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Potential Rulemaking for Depleted Uranium and Other Unique Waste Streams

Inter Agency Steering Committee on Radiation Standards

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October 15, 2009

Overview

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- Background
- Commission Direction
- Rulemaking
- Workshops
- Next Steps

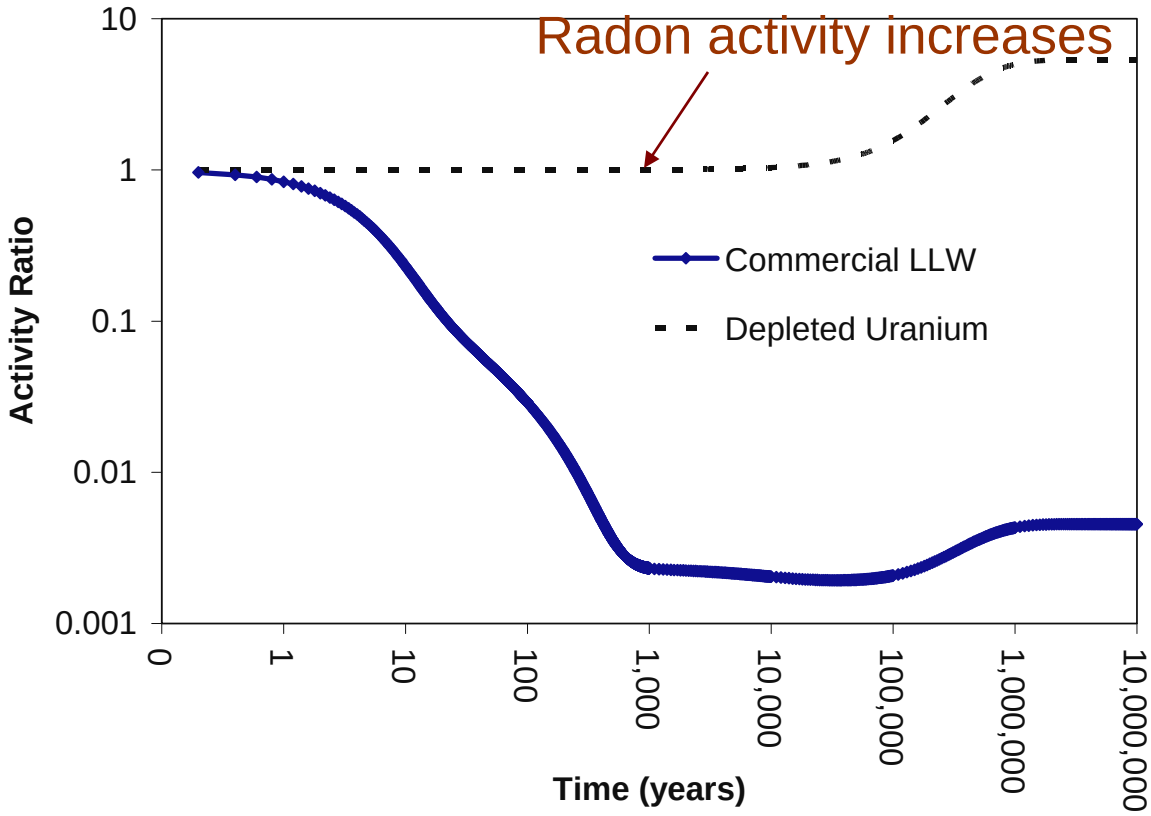
Background

- Significant quantities of DU:
  - "Unique waste stream"
  - Concentrations and quantities not commercially generated
  - Not considered in 10 CFR Part 61
  - Behavior over time
  - Mitigation Possible

Increase burial depth

Install robust radon barrier

DU versus Typical LLW

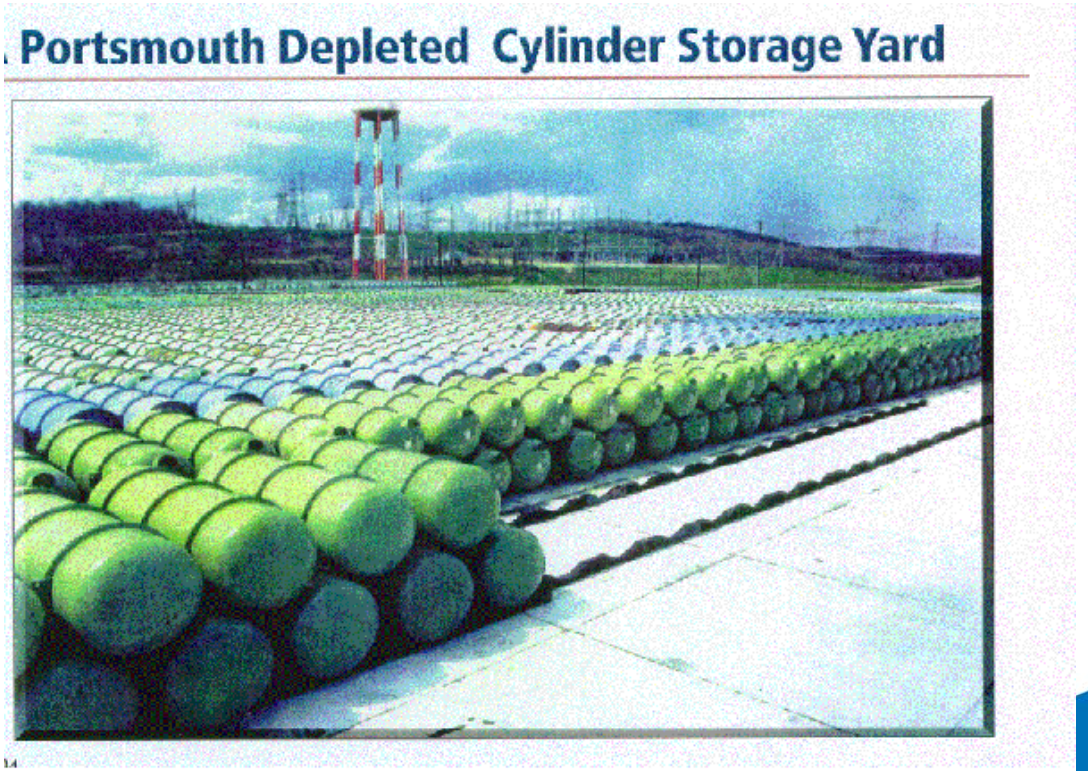


Background

- DU is currently Class A waste
  - Default provision in regulations
  - Assumed that only small quantities would be disposed
    - Approximately 6 MT
    - Draft Part 61 EIS 0.05 µCi/cm^3
    - Specific activity of DU is 0.5 µCi/cm^3

Current Situation

- Emerging commercial enrichment
- Significant quantities for disposal
- More than 1 million metric tons

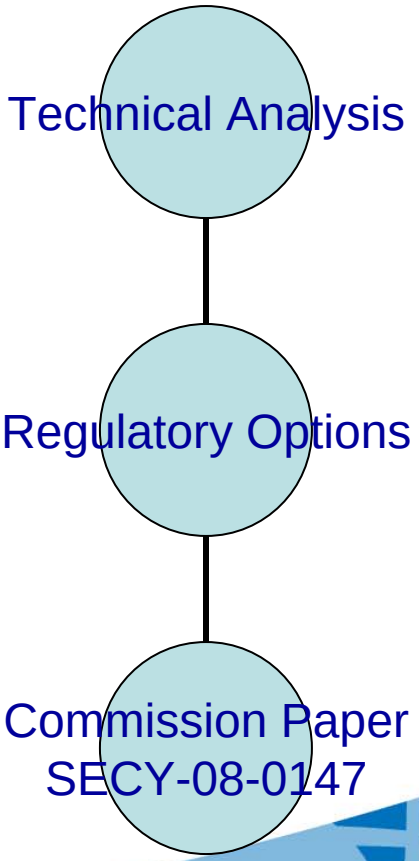


Commission Direction

- Memorandum and Order CLI-05-20, 10/19/05
  - Commission directed staff, “outside of the LES adjudication, to consider whether the quantities of depleted uranium (DU) at issue in the waste stream from uranium enrichment facilities warrant amending section 61.55 (a)(6) or the section 61.55 (a) waste classification tables.”

Commission Paper

- Range of options informed by Technical Analysis
- Provided recommendation
- Staff completed a Commission Paper – October 2008



NRC Analysis

- Screening model developed for SECY-08-0147
- Developed to examine key variables:
  - Period of performance
  - Disposal depth
  - Receptor types and scenarios
  - Site characteristics
- Performed probabilistic assessment
- Analysis methodology for unique waste streams consistent with original Part 61 analysis

NRC Analysis

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- If radon is included, shallow disposal at an arid site is challenging
- For humid sites, the groundwater pathway can exceed the performance objectives
- Greater consideration of long-term stability needed
- Site-specific conditions can result in large variance in impacts

Options Evaluated

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- Generic Communication
- Require site-specific analysis
- Classification of DU within existing classification framework
- Re-examine existing waste classification framework

Path Forward

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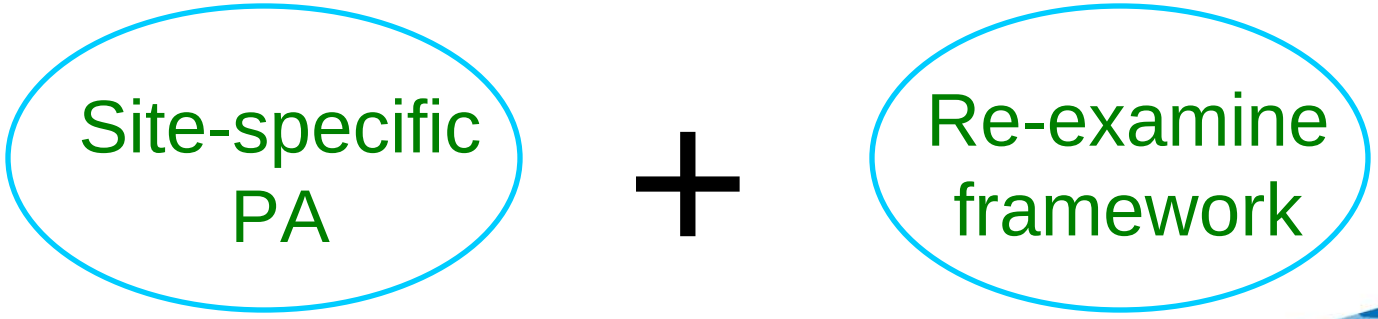
- Commission chose a two-tiered approach
  - Site-specific performance assessment
  - Budget to re-examine the waste classification framework in the long-term

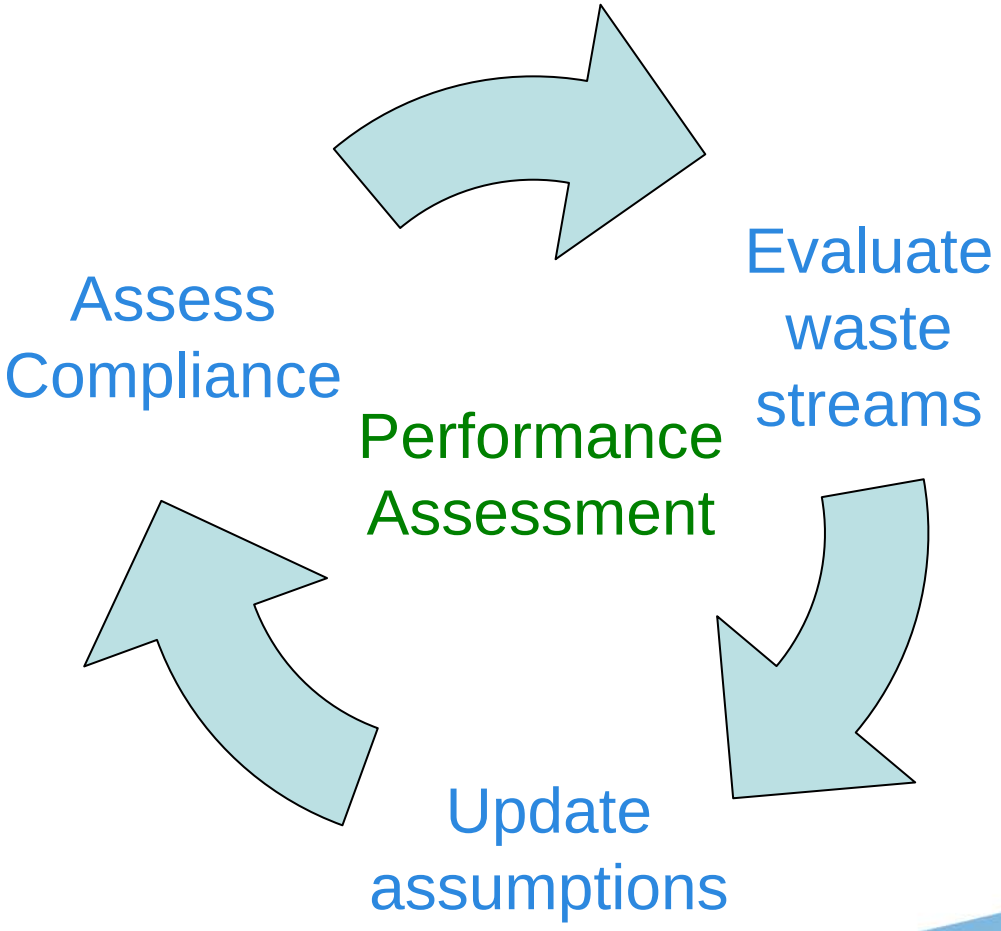


Initial Rulemaking

- Require site-specific analysis
- Meet performance objectives
- Specify criteria needed for analysis
- Develop supporting guidance

Site-specific PA

Role of Performance Assessment



Long-Term Rulemaking

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- Risk-inform waste classification framework
- Change conforming legislation as needed
- Evaluate and revise waste classification tables
  - Explicitly address classification of depleted uranium
  - Consider full range of alternatives

Re-examine framework

Public Workshops

- Bethesda, MD and Salt Lake City, Utah
- Collaborative Discussion
- Rule vs Guidance
  - Period of Performance and intruder dose limit – rule
  - Exposure scenarios – guidance
- Significant quantities – trigger is accepting DU
- Need for interim guidance

Next Steps

- Brief Commission on workshops
- Develop Regulatory Basis – September 2010
- Develop interim guidance

Questions?