



Risk-Informing LLW Management

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LLW Rules

- § 61.41 Principle Protection Requirements (Members of the Public)
- § 61.55 Waste Classification Tables (Deterministic Result for a Generic Site)
- § 61.58 Alternative Requirements for Waste Classification

Risk Metrics for Waste

- Concentration – Best Used as a Metric for Operational Risks
- Quantity – Best Used as a Metric for Disposal Risks

Concentration

- Radiation Protection
 - Worker Protection to External Exposure
- Shipping Cask Operations
 - Compliance with Dose-Rate Limits

Quantity

- For Disposed Radioactive Material
 - Local Concentrations Do Not Matter
 - Total Quantities Released From the Site Do Matter

Area for Improvements

- Greater Emphasis on Risk-informed Approach to LLW Management
- Focus on Radionuclide Content Rather than Waste Origins or Concentrations

Areas for Improvements

- Need to Focus on Extended Storage of Class-B and Class-C LLW
- RCRA Subtitle-C and Subtitle-D Sites are Suitable for Certain Types of LLW and LAW

Approaches for Improvements

- Risk-informed Waste Determinations Have Been Successfully Performed for...
 - Savannah River
 - Idaho National Engineering Labs

Approaches for Improvements

- Risk-inform the Characteristics of:
 - Waste
 - Waste Package
 - Disposal Technology Below-Grade
 - Cover Technology Above-Grade
 - Geohydrology and Geology

Approaches for Improvements

- Specify the Methods and Perform a Risk-informed Assessment
- Use the Results to Specify Site-specific Quantities/Limits for the Expected Wastes within the Bounds of the Risk Assessment