U.S.NRC
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Protecting People and the Environment

Briefing on Blending of Low-Level Waste

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Presenters & Topics

- **Larry Camper: Overview**
- **Jim Kennedy: Summary of SECY-10-0043**
- **Christianne Ridge: Analysis of safety issues in SECY-10-0043**

Overview of LLW Blending

- **Key messages**
- **Significant actions**
- **Options**

Key Messages

- **Limited access to Barnwell disposal facility**
- **Blending as a generator option**
- **Large-scale blending proposal**
- **NRC requirements and guidance**
- **Vote paper**

Waste Classification
10 CFR 61.55, Table 2

Radionuclide	Concentration, Ci/m^3		
	Col. 1 (Class A limit)	Col. 2 (Class B limit)	Col. 3 (Class C limit)
Total of all radionuclides with < 5 yr half-life	700	n/a	n/a
H-3	40	n/a	n/a
Co-60	700	n/a	n/a
Ni-63	3.5	70	700
Ni-63 in activated metal	35	700	7000
Sr-90	0.04	150	7000
Cs-137	1	44	4600

n/a—practical considerations such as the effect of external radiation or internal heat generation limit concentrations of these wastes.

Significant Actions

- Letters and meetings with commercial stakeholders
- Site visits
- Public meeting
- Federal Register Notice
- Independent staff analysis
- SECY-10-0043

Options

- Maintain status quo
- Implement risk-informed, performance-based position
- Further constrain blending
- Prohibit large-scale, off-site blending

Staff Analysis of Blending

James Kennedy, Sr. Project Manager

Stakeholder Concerns

- **Wide variety of views on blending**
- **Example—Volume Reduction Policy Statement**
- **Addressed in SECY paper**

Policy Issues

- Past agency statements on reducing waste class
- Facilitate safe waste disposal
- Impact on existing low-level waste management program
- Disposal capacity

Policy Issues (cont.)

- **Unintended consequences**
- **Greater than Class C waste**
- **Volume reduction**

Staff Recommendation

- **Risk-informed, performance based approach**
- **Consistent with Strategic Plan definitions (RIPB)**
- **Four agency actions**

Staff Recommendation (cont.)

- Piggyback onto “unique waste streams” rulemaking
- Update guidance
- Issue interim guidance
- Revise Volume Reduction Policy Statement

Staff Analysis of Safety Issues Related to Blending

A. Christianne Ridge, Sr. Systems Performance Analyst

Background

- **10 CFR Part 61 Subpart C performance objectives**
- **Basis for waste classification tables**
- **Assumptions underlying waste classification tables**

Homogeneity

- Classification demonstration
- Need for additional guidance
- Consistency with provisions for mathematical averaging
- Intruder dose

Staff Observations

- **Meeting waste classification requirements alone may not demonstrate intruder protection**
- **A site-specific dose analysis could explicitly demonstrate intruder protection**
- **Modern disposal sites are likely to accommodate disposal of blended waste safely**

Staff Recommendation

- **Address blending as part of ongoing unique waste streams rulemaking**
- **Follow current plan that revised rule explicitly require site-specific intruder dose analysis**
- **Generalize language to include blended waste**

Conclusions

- Large scale blending timely and real
- Stakeholder questions, concerns and issues
- Status quo not explicitly clear
- Risk-informed, performance-based approach
- Four significant actions
- Communication with stakeholders

List of Acronyms

- **FSME – Office of Federal and State Materials and Environmental Management Programs**
- **SECY– Office of the Secretary**
- **DWMEP – Division of Waste Management and Environmental Protection**