



Improving Radioactive Waste Management:

An Overview of EPA's Low Activity Waste Effort

U.S. Environmental Protection Agency
Radiation Protection Division

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Presentation Overview

- EPA's Advance Notice of Proposed Rulemaking (ANPR)
- Environmental and Economic Concerns
- Regulatory Context
- Discussion of ANPR
- Stakeholder Context and Reactions
- Next Steps



What is the ANPR?

- Goal is to solicit public comment and information on a wide variety of low activity radioactive waste disposal issues
- Is not a proposed rule, but presents broad concepts and asks many questions
- Does not affect existing regulations or programs
- Provides a vehicle for public dialogue to help guide EPA in determining next steps



Environmental and Economic Concerns

- Inefficient waste disposal?
 - Efficiency discouraged by limited disposal options, dual and inconsistent regulation
- Prolonged storage?
 - Some waste stored on site by generators
- Excessive transportation?
 - Long transportation routes to the few current disposal sites
- Inappropriate regulation?
 - Some wastes inconsistently or not regulated at all for radioactivity
- Inefficiency in case-by-case examination?
 - Opportunities for generic technical and/or regulatory consideration



EPA's Approach

- Consider waste from its physical, chemical and radiological properties
 - Apply consistent methods to evaluate the risks of radioactive material, regardless of origin
- Identify additional options appropriate to potential risks of disposal
- Target lower-activity wastes as suited to such additional destinations
- Implement additional disposal options in a way that
 - Maintains appropriate and protective regulatory controls
 - Provides Other Fed Agencies, States and the public appropriate avenues for oversight, participation and input



Improve Regulatory Context

- Radioactive waste disposal is governed by a fragmented and inconsistent system:
 - Low-Level Waste
 - Only 3 sites operating (SC, WA, UT)
 - Capacity limited and will become more so
 - Type of waste accepted limited (e.g., mixed waste)
 - Compacts established to develop additional sites
 - Uranium/Thorium Mill Tailings (large volumes)
 - NRC decision removed certain legacy tailings from regulatory system (e.g., FUSRAP)
 - Technologically Enhanced Naturally Occurring Radioactive Material (large volumes)
 - No Federal, inconsistent State regulation
 - Existing disposal practices may warrant additional scrutiny (e.g., land spreading, uncontrolled burial)



Elements of EPA's ANPR

- Introduces concept of “low activity”
 - No current statutory or regulatory definition
- Focuses on radiation content rather than origin
 - Evaluate safety for the material in question
- Articulates potential universe of “low activity”
 - Mixed waste, TENORM, Low-level waste, Uranium or thorium ore processing waste, NRC exempt or “unimportant quantities”
 - Could include DOE waste as well as commercial



Elements of the ANPR (cont.)

- Discusses methods and modeling to be used to define “low activity” waste
- Identifies hazardous waste landfills as potential destinations for “low activity” waste
- Discusses regulatory and non-regulatory mechanisms
- Asks many questions in all areas



Defining “Low-Activity”

- Risk modeling is primary way to limit amount of radioactivity in disposal cell
 - Long-term performance of unit
 - Post-closure site use
 - Facility worker exposures
- Risk modeling is same type of analysis used to judge safety of LLW facilities
 - Projected performance, not design, is key factor
 - Behavior based on chemical characteristics
- Other supporting criteria can be applied
 - “sum of fractions”, activity/volume caps, waste form



Hazardous Waste Landfills

- Have explicit design and engineering requirements, robust regulatory framework
- Are designed to contain chemicals that present significant risk to public health
- Have been used for radioactive material
 - Examples: TENORM, Uranium mill tailings
 - Case by case consideration
- ANPR asks for comment on other types of waste disposal facilities (e.g., solid waste landfills)



Making it Safe

- Demonstrate protectiveness by evaluating RCRA engineering/technology with performance modeling
- Adopt same standards of protectiveness that are applied in other radiation applications and for other pollutants
- Apply other measures common to radioactive waste disposal as necessary to increase confidence



Potential Approaches

- Regulatory proposal could
 - Identify waste concentration levels based on risk management criteria with additional conditions as appropriate
 - Describe implementation scheme (general license, specific license, exemption, other?)
- Non-regulatory guidance / technical reports could
 - Provide information and technical analysis of disposal options and highlight “best practices”
 - Provide risk information and waste acceptance criteria across a spectrum of considerations
 - Enhance case-by-case decision making
 - Enhance public participation opportunities



Major Uncertainties

- Waste
 - Knowledge and characterization of eligible waste
- Oversight and Adoption
 - Need & level of NRC oversight not clear
 - Level of State support/adoption not clear
- Incentives
 - Generator and Disposal Facility interest in changing practices
 - "Markets" for low-activity waste
 - Other Generator / Disposal Issues (e.g., liability)
- Compact, State and Public acceptance



Public Comment Period Recently Closed

- As of 5/10, 370+ comments in docket
 - See www.epa.gov/edocket
 - Select “View Open Dockets”
 - Docket # OAR-2003-0095
 - Select pdf icon if present
- Large majority are private citizens opposing “deregulation”
- Numerous comments from a host of stakeholders – States, Compacts, Generators, Waste management facilities, industry, etc.



Initial Perceptions and Reactions

- Action is deregulatory and less protective (environmental groups)
- Concern existing management practices will be cast in negative light (DOE, USACE)
- Support for concept and approach, unclear on need and implementation; interest in coordinated Federal approach (States)
- Status quo discourages the efficient disposal of material (waste generators)
- Interest in exploring further, key is State and public “buy-in” (subset of RCRA-C operators)



Next Steps

- Absorb and Communicate Public Input
 - Analyze public comments
 - Continue stakeholder interaction
 - Continue discussions, conferences, etc.
 - Coordinate with other Agencies, States
 - Engage interested public
- Communicate out developing themes, refinements of “the problem(s)”



Next Steps (cont'd)

- Develop Spectrum of Options
 - Regulatory
 - Non-Regulatory
 - Supplementing not substituting for existing system
- Integrate Activities within Existing System
 - Broad goals in multi-faceted context
 - Emphasize risk basis for management rather than origin
 - Recognize and Navigate Federal and State Authorities
 - Technical basis necessary but not sufficient
 - Public participation and acceptability