

attractive approach for a rulemaking. The key in this approach would be to determine what concentrations of radioactivity in LAMW are appropriate for disposal in a RCRA Subtitle C landfill. As the preamble to subpart N to 40 CFR part 266 noted, an evaluation of the requirements embodied in the respective regulatory frameworks for RCRA and AEA revealed that both offer significant protections to human health and the environment. (See 66 FR 27223, May 16, 2001.) In the following sections, we discuss more fully the option of pursuing a rulemaking allowing disposal of LAMW in a RCRA Subtitle C landfill.

A. What Needs To Be Done To Allow Protective Disposal of LAMW?

Because mixed waste contains both a hazardous chemical component and a radioactive component, the safe disposal of low-activity mixed waste must combine elements pertinent to both types of hazards. The RCRA regulatory standards and permitting process provide for control of the chemically hazardous waste components. If EPA pursues rulemaking for the disposal of LAMW, we would focus on the controls necessary to ensure protective disposal of the radioactive component of the waste. We do not propose to change, either directly or indirectly, any of the RCRA provisions regulating the disposal of the chemically hazardous components of the waste. For the radioactive component of the waste, limits on the concentration of radiological waste that can be disposed of in a RCRA Subtitle C landfill may be the most straightforward method to use. These limits would be protective of the public health and would take into account the waste forms derived from the RCRA treatment standards and the design and performance of engineered barriers associated with such landfills.

1. Assess Characteristics of LAMW

The characteristics of low-activity mixed waste are important factors in determining whether a given disposal concept will be appropriate. By "characteristics" we mean the properties that will influence our technical analysis of LAMW disposal, because they affect the way the waste will behave in a Subtitle C disposal cell and potential radiation exposure to people. Properties of interest will include physical form and chemical composition of the wastes, and radionuclide content (specific radionuclides and their concentrations).

There is limited information available on mixed waste, particularly when

compared to waste that is only low-level radioactive or RCRA hazardous. The most comprehensive survey of commercial mixed waste was conducted by NRC and EPA in 1992 ("National Profile on Commercially Generated Low-Level Radioactive Mixed Waste," NUREG/CR-5938). A summary of this survey is available at <http://www.epa.gov/radiation/mixed-waste/nat-prof.htm>. NRC indicated that, based on 1990 practices, commercial facilities generated about 3,950 cubic meters of mixed waste annually and held another 2,120 cubic meters in storage. The profile divides mixed waste properties and generation into five categories: medical facilities, academic institutions, government institutions, industrial facilities, and nuclear power plants. For various reasons, such as improved waste management practices and information collected by a few States, we believe the volumes of mixed waste being generated today may be significantly lower than those described in NRC's profile. For example, when developing our mixed waste rule of May 2001, our discussions with mixed waste generators suggested that the industry has recognized the limited progress in developing mixed waste treatment and disposal capacity and taken steps to reduce mixed waste generation in order to reduce the associated financial and regulatory burden.

Mixed waste (and therefore LAMW) is also generated by DOE. In fact, DOE has a legacy of environmental and process wastes requiring disposal and significant volumes are expected in the future as DOE sites undergo continued cleanup. As discussed in more detail later (see section II.J), DOE has indicated that tens of thousands of cubic meters of low-level radioactive waste that is mixed waste (MLLW) may be considered for disposal in commercial disposal facilities. Some fraction of this waste may have concentrations low enough to qualify as LAMW. The approach presented in this ANPR may also facilitate the cleanup of contaminated DOE sites in a protective, expedited, and cost-effective manner. We request comment on the application of a rulemaking based on this approach to DOE LAMW.

We encourage mixed waste generators to give us their perspective on the current status of mixed waste generation, storage, and disposal. In particular, we would like to know whether generators believe the 1992 EPA/NRC profile accurately describes the state of mixed waste generation today and how their mixed waste experience compares to that profile. Further, since an approach using

radionuclide concentration limits to define LAMW for disposal at Subtitle C facilities may be the most workable, we would like generators to tell us which radionuclides are of most concern to them and the concentrations that would address a significant portion of their waste (e.g., what concentration of a particular radionuclide is found in 25%, 50%, 75% of a generator's waste).

2. Assess Alternative Disposal Methods

Because we are focusing on simplifying disposal of LAMW, we must assess the suitability of land disposal methods that have features that could contribute to containment and isolation of low concentrations of radionuclides or treated hazardous constituents. Disposal facilities meeting this description would include:

- Low-level radioactive waste facilities licensed under 10 CFR part 61;
- Hazardous waste disposal facilities permitted under RCRA Subtitle C;
- Uranium mill tailings facilities operating under 10 CFR part 40; and
- Solid waste disposal facilities permitted under RCRA Subtitle D.

Today's ANPR focuses on hazardous waste facilities permitted under RCRA Subtitle C. We do not see a need to address low-level waste facilities, which are licensed with conditions on acceptable radionuclides and concentrations (which may vary for each licensed facility). Further, the rule we issued in 2001 at 40 CFR part 266, subpart N established conditions under which mixed waste could be sent to an NRC or Agreement State licensed low-level waste facility without requiring a RCRA permit. Similarly, while NRC has explored the possibility of allowing mill tailings facilities to accept RCRA hazardous and low-level radioactive waste, those facilities are not generally able to accept either without site-specific licensing. Finally, at this time, we do not expect to extend our disposal concept to RCRA Subtitle D (non-hazardous solid waste) landfills. However, the most recent EPA standards for such facilities (40 CFR part 258) require them to have engineered features that are similar in many ways to Subtitle C facilities. Further, our recent Hazardous Waste Identification Rule (HWIR) effort was intended to identify levels at which hazardous constituents pose a sufficiently low risk that they may be sent to Subtitle D facilities. (See 66 FR 27266, May 16, 2001.) We also note that NRC, in collaboration with the State of Michigan, has recently concluded that certain very low-activity wastes from the decommissioning of the Big Rock Point nuclear facility may be sent to a