

and disposal facilities, including the appropriate level of Federal and/or State oversight. What regulatory arrangement, including division of responsibilities between EPA and NRC, would be most likely to facilitate the safe management and disposal of these wastes? We would also welcome suggestions as to the most effective ways to minimize the effects of dual regulation.

In our discussions, NRC has identified several regulatory options that it might apply to LAMW. We discuss these potential NRC regulatory approaches to LAMW in section II.F, and have included some questions to elicit public comment on those approaches. However, NRC will discuss issues specific to NRC's regulatory system in greater detail as it proceeds through its own rulemaking process. Our action today focuses more on technical and policy questions surrounding the use of RCRA-C technology and regulatory framework for disposal of LAMW, the applicability of the RCRA-C technology to other low-activity radioactive wastes, and non-regulatory approaches that might prove effective in managing and disposing of low-activity wastes. We encourage commenters to respond to all questions in today's action.

B. Why Is There a Need To Simplify Disposal of LAMW?

1. Dual Regulatory Structure

Mixed waste is regulated under both RCRA and the AEA. The need to comply with two separate regulatory systems, each of which is targeted to a different component of the waste, creates a certain regulatory and economic burden on mixed waste generators. While many of the requirements of the two systems have similar purposes (*e.g.*, inspections), they can have the effect of creating two distinct regulatory compliance infrastructures. Generators (as well as treatment and disposal facilities) must achieve compliance with both systems. In some cases, these requirements may appear to be duplicative.

Approximately 3000 small volume generators store mixed wastes, in part because disposal options are extremely limited. Some estimates are that the number of individual sites storing mixed waste could be significantly higher, though there is greater uncertainty in these estimates. The lack of disposal options for these generators causes increased management costs. It also can result in mishandling and perhaps illegal dumping of the waste. Some mixed waste has been in storage for over a decade. These concerns are not limited to small generators. The EPA

rule discussed in section II.B.2 was largely driven by power companies' concern over dual regulation of mixed waste. We believe, in general, that treatment and permanent disposal of waste, when available, is preferable to storage.

Also, we are concerned that the high costs and difficulty of disposing of mixed waste will cause doctors, hospitals, and diagnostic laboratories to suspend certain procedures, which could result in the provision of less than optimum health care.⁸ There are reports that the inability to store and dispose of radioactive waste has caused researchers to avoid scientific procedures that are known to be effective and to develop less effective alternatives.⁹ We also are concerned that such problems indirectly may be hampering medical research.

We believe it is possible to alleviate the problem if more of the facilities that can accommodate hazardous waste safely were allowed, under certain conditions, to dispose of LAMW. Of the commercial facilities currently permitted to dispose of hazardous waste under RCRA, only one is also licensed to dispose of AEA radioactive waste (and mixed waste). (This facility and one other that we are aware of that has applied for a license to dispose of AEA radioactive waste are special cases, as their original plans involved accepting radioactive waste.) This situation may be due, in part, to the additional burden faced by the RCRA disposal facility operators in applying for a site-specific license under 10 CFR part 61 or its equivalent to establish a full-fledged low-level radioactive waste (LLRW) disposal facility. Both 10 CFR part 61 and RCRA Subtitle C describe fairly lengthy, data intensive, and costly processes for regulatory approval. The somewhat different focus of the two systems (RCRA as "technology based", part 61 as "performance based") may also serve to limit the number of facilities willing to demonstrate compliance under both regulatory systems. (See section II.C for more detail on the licensing-permitting issue.) A few commercial Subtitle C landfills have accepted non-AEA radioactive waste with the approval of State authorities, which supports our belief that, with the proper controls, the RCRA-C technology can provide protective disposal of certain types of radioactive material. Issues associated

with non-AEA radioactive wastes are discussed in section III.

We asserted RCRA authority over the hazardous portion of mixed waste in the mid-1980s; however, section 1006 of RCRA states that the AEA takes precedence over RCRA in cases where the regulatory requirements are inconsistent. Because the approach we are considering would rely on RCRA Subtitle C landfill technology, and because low-activity mixed waste would have relatively low concentrations of radionuclides, our approach would permit the disposal of LAMW if it met RCRA-C regulations and practices. This implies that the risks to workers, the public, and the environment (including ground water) presented by the radioactive portion of LAMW would be effectively minimized considering the controls already in place at the RCRA-C landfills. Waste generators would also bear responsibility for ensuring that their waste met conditions for disposal as low-activity mixed waste.

This approach would take into account the practicalities of implementing LAMW disposal at RCRA-permitted hazardous waste landfills, rather than transforming them into more AEA-like facilities. We believe that this will introduce sufficient flexibility as to allow LAMW generators to take advantage of additional disposal options. Similarly, the number of commercial facilities currently permitted under RCRA to accept hazardous waste (roughly 20) is significantly higher than the number licensed to accept low-level waste (3) or mixed waste (1), offering the prospect of greater competition and disposal capacity. Though this comparison is instructive, we do not want to limit our focus to commercial disposal facilities. A significant number of companies have been issued permits for their own "captive" or privately-owned hazardous waste disposal facilities, which typically accept waste only from generators owned by or affiliated with the landfill operator. It is conceivable that mixed waste generators might be among those with access to such facilities. These facilities must meet the same RCRA permitting requirements as commercial facilities and therefore, this approach should be equally appropriate for the receipt of LAMW. We request comment on whether we should consider only a subset (*i.e.*, only the commercial or private sector) of the RCRA-C universe in our analyses. On a related topic, should RCRA landfills operated by DOE on its own sites be considered within the scope of this approach?

⁸ Kaye, Gordon J., "The Crisis in LLRW Disposal Short- and Long Term Effects on the Biomedical Community," Newsletter for Appalachian Compact Users of Radioactive Isotopes, June 1991.

⁹ Isaac, Peter G., *et al.*, "Nonradioactive Probes," Molecular Biology, p 259-160, vol. 3, June 1995.