

Updating Disposal Rules for Low-Level Waste

The Nuclear Regulatory Commission is amending its rules for the disposal of some low-level radioactive wastes. These wastes include depleted uranium left over from the uranium enrichment process, and “blended” waste, a mixture of different waste types with different levels of radioactivity. These wastes did not exist in large quantities and were not analyzed when the current rules were put in place. Before they can be disposed, the new rules will require an analysis of the specific disposal facility and the specific wastes. This analysis would show whether the overall system can safely contain the wastes. The new rules would also apply to other wastes that have not been considered, such as from future spent-fuel reprocessing or other fuel cycle facilities.

Background

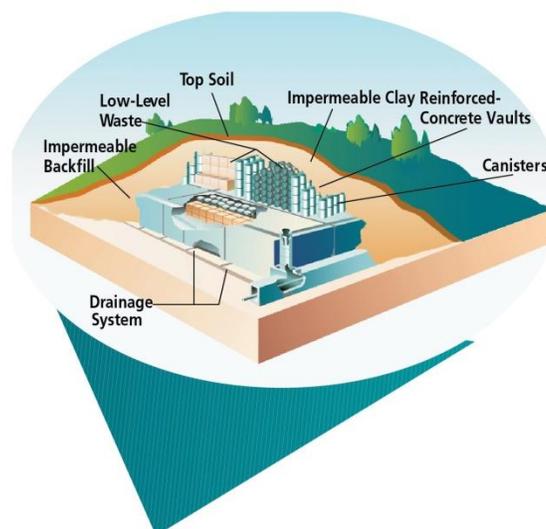
Low-level waste is defined as radioactive waste that is not [spent nuclear fuel](#), [transuranic waste](#), uranium mill tailings (sandy residue from processing uranium ore) or [high-level waste](#). It also includes certain types of material known as [byproduct material](#). It has been contaminated with radioactive materials or is radioactive itself. Low-level waste includes protective clothing, cleaning supplies, filters, sealed sources, components from nuclear power plants, medical equipment and laboratory tissues.

Depleted uranium also meets the NRC’s definition of low-level waste. Depleted uranium is unique because it actually becomes more radioactive as it decays over thousands of years. Since 2006, the NRC has issued licenses for four new commercial uranium enrichment facilities. Each of these facilities can generate large amounts of depleted uranium. While reviewing these license applications, NRC staff began planning for the need to dispose of this material.

Low-level waste is classified and disposed of based on its radioactivity. Blending takes Class A waste—the least radioactive class—and combines it with waste that exceeds the Class A limit for radioactivity. Blending would create larger quantities of Class A waste near the upper limit of radioactivity for this class of waste.

The NRC is responsible for ensuring the safe disposal of low-level waste from commercial activities. NRC regulations found in 10 CFR Part 61 set minimum standards for the performance of disposal facilities to protect public health and the environment. The regulations give operators flexibility in how to meet those standards. When the rules were developed, no commercial facilities were

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producing large amounts of depleted uranium waste or Class A waste near the upper radioactivity limit. So, the impacts of disposing of these wastes were not explicitly considered.

The staff prepared a technical analysis that concluded safe disposal of this waste depends on the specific geology, geography and climate of the disposal site. The Commission then directed the staff to amend NRC regulations and provide guidance for meeting them. The new rules will require a site-specific analysis for disposing of the unanalyzed waste streams and provide technical parameters for conducting the analysis.

Low-Level Waste Disposal Sites

Low-level waste is sent to licensed, privately-operated disposal facilities. Either the NRC or an Agreement State issues the license, which specifies the classes of waste the facility can accept. There are 37 states that have agreements with the NRC to regulate radioactive materials. The four active low-level waste disposal facilities in the United States are in Agreement States:

- EnergySolutions Barnwell Operations, Barnwell, S. C.
- U.S. Ecology, Richland, Wash.
- EnergySolutions Clive Operations, Clive, Utah
- Waste Control Specialists, Andrews, Texas

Rulemaking Process

There are several steps to the NRC process for developing the new rule. In September 2009, the NRC held public workshops to solicit early input on issues associated with the rulemaking. Using that input, the NRC developed a technical document to support the new rule. The agency also took comments on several preliminary versions of proposed rule language. Based on that feedback, the agency published the proposed rule for comment. The NRC will analyze and respond to the comments, make any necessary changes, and with Commission approval, publish a final rule in the *Federal Register*. It would become effective one year after the final rule is published. Agreement States will have three years from the publication date to adopt compatible regulations.

For more details, see these [documents](#) related to the rulemaking.

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