

**HTRW Center of Expertise
Environmental Regulatory
Fact Sheet 00-01**

Storage, Treatment, Transportation, and Disposal of Mixed Waste

INTRODUCTION

On 19 November 1999, the Environmental Protection Agency (EPA) proposed a rule entitled, "Storage, Treatment, Transportation, and Disposal of Mixed Waste", 64 Federal Register 63464. In this rule, EPA proposes to provide increased flexibility to facilities that manage low-level mixed waste (LLMW) or naturally occurring and/or accelerator-produced radioactive material (NARM) mixed with hazardous waste.

APPLICABILITY

This proposed rule will be applicable to low-level mixed waste (LLMW) and NARM waste mixed with hazardous waste. Sources of such mixed waste within the Department of Defense (DoD) community include:

- Hospitals where radioactive materials are used in various processes and are mixed with hazardous wastes;
- Research facilities using scintillation cocktails generating waste that contains both radioactive waste and hazardous waste components;
- Remediation sites where soil or debris contain both radioactive waste and hazardous waste from past activities; and
- Wastes resulting from spills or accidents involving radioactive commodities that are mixed with hazardous waste either as a direct result of the accident or via decontamination activities.

Examples of radioactive materials used by DoD under NRC license that could potentially become mixed with hazardous waste as a result of an accident include:

- Radiac calibrator sets
- Chemical agent detectors
- Tritium fire control devices
- Tester moisture and density gauges
- Magnesium/thorium alloy aircraft engine parts
- Depleted uranium ammunition
- Thorium fluoride coated optics
- Aviation and troop command (ATCOM) industrial radiographic equipment
- Electron tubes
- Radium used in radioluminescent devices
- ATCOM radium commodities
- Thorium combustion liners
- Vehicle radium dials/gauges
- M97 explosive detector
- M11 pistols

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KEY DEFINITIONS

Agreement State. This means a state that has entered into an agreement with the Nuclear Regulatory Commission (NRC) under subsection 274b of the Atomic Energy Act (AEA) of 1954, as amended (68 Stat. 919), to assume responsibility for regulating within its borders source, special nuclear, or byproduct material in quantities not sufficient to form a critical mass.

Eligible NARM. For the purpose of this proposal, this means NARM that meets the acceptance criteria of a LLRWDF licensed by NRC or an Agreement State in accordance with 10 CFR 61, and is also contaminated by a hazardous waste, and therefore, is eligible for the transportation and disposal conditional exemption.

Low-Level Mixed Waste (LLMW). This means low-level radioactive waste containing a RCRA hazardous waste component.

Low-Level Radioactive Waste (LLW). This means radioactive waste containing source, special nuclear, or by-product material which is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, byproduct material as defined in Sec. 11(e)(2) of the Atomic Energy Act or NARM. (See also NRC definition of "waste" at 10 CFR 61.2)

Low-Level Radioactive Waste Disposal Facility (LLRWDF). This means a disposal facility licensed by the NRC or Agreement State for the disposal of low-level waste.

Mixed Waste. This is defined in RCRA as amended by the Federal Facility Compliance Act of 1992, and means a waste that contains both RCRA hazardous waste and source, special nuclear, or by-product material subject to the Atomic Energy Act of 1954, as amended.

Naturally Occurring and/or Accelerator-produced Radioactive Material (NARM). This means radioactive materials that are naturally occurring or produced by an accelerator. The naturally occurring radioactive material (NORM) is defined below. Currently NARM is not regulated by the NRC or EPA. Rather, it is regulated by the States under State law, or by DOE under DOE Orders.

Naturally Occurring Radioactive Material (NORM). This is a subset of NARM and refers to materials whose radioactivity has been enhanced (radionuclide concentrations are either increased or redistributed where they are more likely to cause human exposures) usually by mineral extraction or processing activities. Examples are exploration and production wastes from the oil and natural gas industry, and phosphate slag piles from the phosphate mining industry. This term is not used to describe or discuss the natural radioactivity of rocks and soils, or background radiation, but instead

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refers to materials whose radioactivity is technologically enhanced by controllable practices.

NRC or Agreement State License. This means a license issued by the Nuclear Regulatory Commission or an Agreement State under authority granted by the AEA.

SUMMARY OF PROPOSED RULE

Mixed waste and NARM mixed with hazardous waste are regulated under multiple authorities. The hazardous waste component is regulated by EPA, or an authorized state, under RCRA. The source, special nuclear, or byproduct material component is regulated by the NRC, or an Agreement State, under the AEA. The NARM component, though not regulated by the NRC or EPA, may be regulated under state law.

EPA has compared RCRA requirements for treatment, storage, transportation, and disposal of hazardous waste against radioactive waste management requirements. They determined that deferral from RCRA to NRC low-level waste management practices would not compromise protection of human health or the environment. Therefore, EPA is proposing to allow LLMW and NARM mixed with hazardous waste to be exempt from RCRA regulation when managed per NRC requirements.

The Proposed Storage and Treatment Exemption

The rule proposes to exempt LLMW from the definition of hazardous waste. This will allow generators to store LLMW on-site without obtaining a RCRA storage permit and without meeting other RCRA hazardous waste management requirements.

To be eligible for the storage exemption, the LLMW must be all of the following:

- The wastes must be generated at the site where the storage will occur.
- The wastes must be stored on-site in tanks or containers under a NRC or Agreement State license.
- The wastes must be stored in compliance with chemical compatibility requirements for tanks or containers as specified in RCRA treatment, storage, and disposal facility regulations in 40 CFR 264.177 , 264.199, 265.177, and 265.199.

To qualify for the storage exemption, all of the following conditions must be met:

- The generator must have a valid NRC or Agreement State license for storing the LLMW.
- The storage must be in compliance with the terms of the license.
- The waste must be eligible for the exemption as described above.
- The generator must notify EPA by certified mail that the exemption is being claimed.
- The generator must certify that personnel have been appropriately trained.
- The LLMW must be inventoried at least annually.
- The LLMW must be inspected at least quarterly.

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- Records of inventories and inspections must be maintained for three years from the date of disposal or in accordance with NRC requirements, whichever is longer.
- The facility must have a contingency plan to address emergencies and must provide copies to local authorities that may have to respond to an emergency relating to the exempt waste.

During the storage of LLMW, the proposal would allow the conditionally exempt waste to be treated on-site in tanks or containers via neutralization, solidification, and other forms of stabilization, under a NRC/Agreement State license. It does not, however, allow thermal treatment such as incineration. Because the waste is exempt from the definition of hazardous waste, a RCRA permit would not be required for the treatment.

The storage conditional exemption ends when either of the following occurs:

- The LLMW has met the requirements of the NRC/Agreement State license for decay-in-storage and can be disposed of as non-radioactive waste. At that point, the waste is considered “newly generated”.
- Waste is transported off-site for any reason other than disposal at a LLRWDF under the disposal conditional exemption proposed in this rulemaking.

The Proposed Transportation and Disposal Conditional Exemption

The rule proposes to conditionally exempt LLMW or eligible NARM from RCRA manifest, transportation, and disposal requirements. To be eligible for exemption, the waste must meet the acceptance criteria of a LLRWDF licensed by the NRC or an Agreement State.

The conditions of the exemption are as follows:

- The waste must meet LDR treatment standards.
- The generator must notify designated agencies (EPA/RCRA authorized states, NRC/Agreement States) regarding the exemption and must obtain written confirmation that the notices were received. The notification includes information regarding the generator, the waste, and the disposal location.
- The waste must meet NRC transportation/manifest requirements.
- The waste must be containerized.
- Records must be kept and submitted to EPA upon request. The records must include LDR related documents; copies of notifications to RCRA and NRC/Agreement State agencies; copies of notifications to the disposal facility; return receipts for the notification package sent to the EPA/authorized State and NRC/Agreement State agencies; and copies of NRC/Agreement State manifests and cover letters.
- The receiving facility must be notified of the exempt status of the waste.
- The waste must be disposed at a low-level radioactive waste disposal facility licensed by the NRC or Agreement State.

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CONCLUSION

The exemptions in this proposed rule may benefit generators of mixed waste with NRC/Agreement State licenses. It allows them to treat and store certain mixed waste onsite without a RCRA permit. As a result, some wastes can be rendered non-radioactive by allowing decay-in-storage. Other wastes can be rendered non-hazardous by treating the RCRA hazardous waste component via stabilization. Generators able to meet LDRs and other conditions, will be able to dispose of waste at LLRWDFs that currently are unable to accept mixed waste because of the RCRA hazardous waste component. Therefore, overall this rule should be beneficial to mixed waste generators having NRC/Agreement State licenses.

The reader is directed to Section XI, page 63496, of the proposal for a comprehensive list of issues on which EPA is specifically seeking comments. EPA will accept comments through 17 February 2000.