



BACKGROUND

Office of Public Affairs

301.415.8200



www.nrc.gov ■ opa.resource@nrc.gov

Disposals of Very Low-Level Waste Under 10 CFR 20.2002

Radioactive waste is produced as a byproduct of using radioactive materials in nuclear reactors, fuel processing plants, hospitals and research facilities. Radioactive waste is also generated while decommissioning and dismantling nuclear reactors and other nuclear facilities. These wastes must be safely managed and disposed of to protect people and the environment from the effects of ionizing radiation.

Radioactive waste is basically divided into "high-level waste" – mostly spent fuel from reactors – and "low-level waste." Low-level waste can range in radioactivity from just above background levels found in nature to much higher levels. The Nuclear Regulatory Commission's regulations (10 CFR Part 61) establish criteria for licensing low-level waste disposal sites. The regulations establish four classes of waste: A, B, C and greater than Class C, each with increasing hazards. The regulations specify controls needed to effectively isolate each class of waste from the environment.

However, some wastes with very low levels of radioactivity pose minimal risk to people or the environment. These wastes don't require the controls spelled out in 10 CFR Part 61. The regulations (10 CFR Part 20) offer a way for the NRC to approve alternative disposal methods for these wastes.

Very Low Level Waste

Very low-level waste does not have a statutory or regulatory definition. (It was previously called "low-activity waste" in some NRC guidance.) The term is used to refer to waste with the lowest levels of radioactivity, including naturally occurring radioactivity. Examples could include incinerator ash from research facilities, demolition debris (concrete, metal), soil, and other garbage from nuclear fuel facilities or decommissioning nuclear power plants. The radioactivity level of VLLW is so low that it may be safely disposed of in hazardous or municipal solid waste landfills. The licensed low-level waste disposal sites would still be the destination for waste with higher activity.

10 CFR 20.2002 Process

The NRC considers requests for alternative disposal under section 20.2002 of its regulations. This requires radiation doses be kept as low as reasonably achievable (ALARA) and within the NRC's dose limits. Most requests are for disposal in regulated landfills, but a licensee may also seek approval to dispose of the waste at other off-site facilities or onsite.

For off-site disposal, the NRC staff generally considers three people who might be exposed to radiation from the waste: a transportation worker (truck driver), a worker at the disposal facility, and a long-term resident at the site. If the projected dose for each is less than "a few millirem per year" – or

about 1 percent of the annual background radiation we all receive from nature each year – the NRC staff typically will approve the request. NRC staff will document its analyses in a safety evaluation report and an environmental assessment and will consult with any affected state and tribal governments.

In general, the exposure scenarios considered for on-site disposals are different from off-site disposals. Licensees requesting on-site disposals must ensure that materials disposed of onsite are accounted for in the eventual decommissioning of the site.

Since 2000, the NRC has approved several 10 CFR 20.2002 requests allowing for the disposal of VLLW. These have included soil and waste from various nuclear material sites as well as hundreds of thousands of cubic feet of concrete and other demolition debris from nuclear power plants being decommissioned. These alternate disposal approvals reduce overall risk (for example, from increased transportation distances) and help preserve the disposal capacity in low-level waste facilities for higher-risk waste.

Guidance for Requests for Alternative Disposal Under 10 CFR 20.002

The NRC staff published guidance in 2009 describing the process for reviewing and approving alternative disposal requests. In April 2020, the NRC issued revised guidance describing the agency's process for documenting, reviewing, and dispositioning requests received for alternative disposal of licensed material.

10 CFR 20.2001 Draft Interpretative Rule

In March 2020, the NRC issued a proposed interpretation of its low-level radioactive waste disposal regulations in 10 CFR 20.2001 that would permit licensees to dispose of VLLW in certain hazardous waste landfills that have been exempted from the NRC's low-level waste disposal licensing requirements.

In the proposed interpretation, the NRC would consider approval of requests for specific exemptions from disposal facilities to allow them to accept some VLLW for disposal by land burial. Licensees could then transfer VLLW to an exempted disposal facility under certain conditions without seeking regulatory approval for each transfer. The NRC is requesting comments on this proposed interpretive rule.

References

[10 CFR 20.2002](#)
[2009 Guidance \(ML092460058\)](#)
[2020 Final Guidance \(ML19295F109\)](#)
[2020 20.2001 Information \(ML20120A048\)](#)

May 2020