



# RCRA Closure and Post-Closure Plans

**BACKGROUND:** Proper closure and post-closure care of hazardous and radioactive mixed waste treatment, storage, and disposal units is essential to prevent the migration of hazardous constituents from a unit, and to minimize the need for care of a unit after closure. To ensure that closure and post-closure activities are properly conducted, DOE facilities must prepare detailed closure and post-closure plans. These plans must be submitted as a part of the RCRA Part B permit application, and generally must be approved before closure and post-closure care begin. Facilities that do not receive permits, and close under interim status, must still submit closure plans. Submission of incomplete plans may result in enforcement actions being taken by EPA and/or State authorities and will lead to delays and additional costs being incurred by DOE to revise the plans prior to implementation.

**STATUTE:** Resource Conservation and Recovery Act (RCRA)

**REGULATIONS:** 40 CFR Parts 264 and 265, Subpart G

- REFERENCES:**
1. "Closure of Hazardous and Mixed Radioactive Waste Management Units at DOE Facilities," DOE EH-231 Guidance Manual, June 1990.
  2. "Guidance on Stabilization and Closure of U.S. DOE Mixed and Low-Level Radioactive Waste Disposal Facilities," DOE/LLW-82 Guidance Manual, June 1990.
  3. "Radiation Protection of the Public and the Environment," DOE Order 5400.5, February 8, 1990.
  4. "Radioactive Waste Management," DOE Order 5820.2A, September 26, 1988.

## What is closure?

After completing operations at a hazardous waste management unit (HWMU), DOE facilities must undertake closure. Depending on the type of unit, HWMUs may either be clean closed or closed with wastes in place.

- Clean closure involves removing or rendering non-hazardous all hazardous and radioactive mixed wastes associated with the unit, including contaminated equipment, structures, and soils.
- Closing a HWMU with wastes in place involves removing all hazardous liquids, stabilizing any remaining hazardous or radioactive mixed wastes, and installing a final cover.

## What is post-closure care?

After completing closure at HWMUs closed with wastes in place, DOE facilities must monitor and maintain the unit to preserve the integrity of the containment system and to detect any releases of contaminants from the unit for 30 years. The length of the post-closure care period may be altered at EPA's discretion [40 CFR 264.117 and 265.117].

HWMUs managing radioactive mixed wastes must be closed, and post-closure care initiated, in accordance with low level waste requirements established in DOE Order 5400.5 and 5820.2A and associated guidance documents, as well as RCRA environmental protection, closure, post-closure, and monitoring requirements.

## What are closure and post-closure plans?

DOE facilities must prepare closure and post-closure plans to comply with RCRA interim status and permitting standards.

- A closure plan is a detailed description of the steps necessary to perform partial and/or final closure of a unit at a facility at any point during its operating life in accordance with the closure performance standard [40 CFR 264.112(a) and 265.112(a)].
- A post-closure plan is a detailed description of all activities to be conducted and their frequency during the post-closure care period [40 CFR 264.118(a) and 265.118 (a)].

These plans must contain sufficient detail to allow EPA or State authorities to determine whether the activities described in the plans comply with regulations and adequately reflect the existing conditions of the facility. Brief outlines are not acceptable closure or post-closure plans.

## What are the elements of a closure plan?

A closure plan must describe the activities required to meet the closure performance standard. The closure performance standard specifies that closure must be conducted so as to: minimize the need for maintenance; control, minimize, or eliminate, to the extent necessary to protect human health and the environment, the migration of hazardous wastes and constituents from the facility; and comply with unit-specific closure requirements [40 CFR 264.111 and 265.111].

The required elements of a closure plan for interim status and permitted facilities are the same. At a minimum, the closure plan should contain: a facility description and a general description of the hydrogeologic conditions; estimates of the maximum number, size, and capacity of units in operation and maximum inventory of hazardous wastes; a detailed description of the methods to be used during final and partial closure, including, but not limited to methods for removing, transporting, treating, storing, or disposing of all hazardous wastes; procedures for decontaminating the facility, including soils; ground-water monitoring conducted during closure, if required; unit-specific closure activities (e.g., final cover); partial and final closure schedules; and the expected date of closure (only for interim status facilities without approved closure plans) [see references 1 and 2 above and 40 CFR 264.112(b) and 265.112(b)].

### What are the elements of a post-closure plan?

A post-closure plan must include: a description of monitoring activities and their frequency; a description of maintenance activities (e.g., maintenance of waste containment, monitoring, security, and leachate collection systems); and identification of a DOE facility contact person or office [40 CFR 264.118(b) and 265.118(b)].

### Are closure and post-closure plans required for all facilities?

Closure plans are required for all interim status and permitted hazardous waste management units operating after November 19, 1980. Post-closure plans are required only for units at which hazardous wastes remain after closure [40 CFR 264.112(a), 264.118(a), 265.112(a) and 265.118(a)].

### When must closure and post-closure plans be prepared and submitted?

For new facilities, closure and post-closure plans must be submitted as part of the RCRA Part B permit application before beginning construction. Existing facilities operating under interim status must have submitted the Part B either when requested by the EPA or appropriate State Agency, or by the following deadlines mandated by RCRA, whichever is earlier [40 CFR 270.73]:

- Surface impoundments, waste piles, and land treatment units — November 8, 1985;
- incinerators — November 8, 1986; and
- all other types of units — November 8, 1988.

Interim status units that did not submit applications by the dates above are subject to closure, and will lose their interim status and be forced to close by certain “loss of interim status” (LOIS) deadlines. The LOIS deadlines for land disposal units and incinerators have already passed (November 8, 1985 and November 8, 1989, respectively). The LOIS deadline for all other types of units is November 8, 1992 [40 CFR 270.73].

Existing land disposal units that are made subject to regulation solely by a statutory or regulatory change, and which are granted interim status, must submit their Part

B, including the closure and post-closure plan, within 12 months of the date on which the unit became subject to regulation. If a unit fails to meet this deadline, it loses its interim status on that same date and must close [40 CFR 270.73].

If a facility never receives a permit and closes under interim status, DOE facilities still must submit closure and post-closure plans. DOE facilities must submit these plans for interim status land disposal units at least 180 days before the day closure is intended to begin. For all other interim status units, the closure plan must be submitted at least 45 days before the DOE facility intends to begin closure [40 CFR 265.112(d)].

### What are contingent closure and post-closure plans?

Contingent closure and post-closure plans describe the activities necessary to close a HWMU with wastes in place and to monitor and maintain the unit after closure if clean closure can not be achieved. Contingent plans are required for:

- permitted surface impoundments and waste piles intended to be clean closed but not designed in accordance with liner standards of 40 CFR 264.221(a) and 264.251(a) and not specifically exempted from these standards [40 CFR 264.228(c), 264.258(c), 265.228(c), and 265.258(c)] and
- permitted and interim status tank systems without secondary containment, as required by 40 CFR 264.193(b)-(f), and not specifically exempted from these requirements [40 CFR 264.197(c) and 265.197(c)].

The content and level of detail required for contingent plans are identical to regular closure and post closure plans.

### When should closure and post-closure plans be amended?

Closure or post-closure plans must be amended whenever:

- changes in operations or facility design affect the plans;
- an unexpected event affects the plans (e.g., natural disaster, accident); or
- the expected date of closure changes (for interim status facilities operating without approved closure plans) [40 CFR 264.112(c), 264.118(d), 265.112(c), and 265.118 (d)].

**Questions of policy or questions requiring policy decisions will not be dealt with in EH-231 Information Briefs unless that policy has already been established through appropriate documentation. Please refer any questions concerning the subject material covered in this Information Brief to Jerry Coalgate, RCRA/CERCLA Division, EH-231, FTS 896-6075.**