

The purpose of this module is to provide an overview of requirements applicable to the three categories of waste generators. This overview includes both administrative and substantive hazardous waste management requirements.



Accountability begins with the generator of hazardous waste in the cradle-to-grave waste management system.



By the completion of this module, you should be able to:

- 1. Explain the importance of the generator in the overall waste management system (page G-2);
- 2. Define generator (page G-4);
- 3. Identify different generator categories (page G-5);
- 4. List generator requirements (pages G-7 through G-9);
- 5. List satellite and 90-day accumulation requirements that apply to container storage (pages G-14 through G-18 and G-26 through G-29);
- 6. Know where to get information on 90-day requirements that apply to tanks, containment buildings, and drip pads (pages G-26 and G-30);
- 7. Identify requirements that must be met for exempting on-site treatment from permitting requirements (page G-32); and
- 8. List examples of when on-site generator accumulation standards (i.e., satellite and 90-day accumulation requirements) apply to wastes being recycled (page G-34).

What Is A Generator?

Under 40 CFR 260.10, a generator is "any person, by site, whose act or process produces hazardous waste identified or listed in part 261 of this chapter or whose act first causes a hazardous waste to become subject to regulation."

A specific DOE facility may qualify as a generator. If a DOE facility has off-site facilities such as laboratories, EPA or a state can require that they be viewed as individual sites having to meet the generator requirements outlined in this section.



Generator requirements depend on generator category. This slide introduces generator categories. Slides that follow explain generator requirements and how they differ among generator categories.

Generation category depends on how much waste is generated each calendar month and how much is accumulated on-site at one time. 40 CFR 261.5 defines generator categories. The categories are important because RCRA standards apply differently to each. In most states, **CESQGs** are not subject to substantive provisions of RCRA, provided they determine whether their wastes are hazardous and ensure appropriate disposition according to 40 CFR 261.5(e), (f), and (g). They must be able to verify that they are CESQGs.

SQGs must meet most of RCRA's standards. However, they have longer to accumulate waste on-site and do not have to report their hazardous waste management activities in a biennial report. 40 CFR 262.34(d), (e), and (f) outline the limitations on on-site accumulation. SQGs can accumulate waste without a permit for up to 180 days (or 270 days, if the off-site facility to which the SQG will send the waste is more than 200 miles away). Section 262.44 outlines the reduced reporting and record keeping requirements for SQGs.

LQGs, the focus of this course, are subject to all RCRA generator provisions.

What Administrative Requirements Apply to Waste Generators?





The focus will be on the first three items. Manifesting, record keeping, and reporting will be discussed in more detail in later modules.



40 CFR 262.12 requires that generators who treat, store, dispose of (TSD), transport, or offer for transportation, hazardous waste must have an EPA identification number. The one exception is the CESQG [see 40 CFR 261.5(b)].

Generators obtain an identification number by submitting EPA Form 8700-12.

Generators must also ensure that other facilities and transporters they use have obtained EPA identification numbers.

Manifest: A Key Element in Accountability

- Manifests must accompany wastes on public roads
- Generator and authorized TSD facility must be identified
- Wastes must be packaged and marked to comply with DOT regulations
- Failure to receive completed manifest requires filing an exception report within 45 days
- Generators must certify that they have a waste minimization program in place

An important element of accountability in the overall waste management system is the hazardous waste manifest. The hazardous waste manifest is a "chain-ofcustody" document. All parties handling the waste verify that they transfer all waste listed on the manifest to the next party who will manage it. When the ultimate TSD facility receives the waste, it must send a signed copy of the manifest back to the generator. Receipt of the signed manifests indicates to the generator that the wastes have been properly transferred from the point of generation to the next point of waste management. A breakdown in this chain of accountability (i.e., waste not received, manifest not returned, or proper quantity of waste not received) must be reported to the EPA/state in an exception report.

Another important aspect of the hazardous waste manifest is the generator's certification that it has a waste minimization program in place. EPA clarified these requirements in "Guidance for Hazardous Waste Generators on the Elements of a Waste Minimization Program" (58 FR 31114).



RCRA Storage Options

- Accumulation at point of generation
- Short-term accumulation from several generation points
- Greater than 90-day storage in permitted units

RCRA provides for waste storage in three ways.

- 1. Personnel can collect waste from processes as the wastes are generated. Collection points "at or near the point of generation" are referred to as satellite accumulation areas.
- 2. RCRA also provides for the consolidation of waste streams from different processes and generation points on a facility. Such consolidation does not require a permit, provided specific regulatory standards are met. One of the important requirements is the restriction on storing for no longer than 90 days.
- 3. A permit is required for storage in quantities exceeding 55 gallons for periods longer than 90 days.

A permit is not required for storage in quantities less than 55 gallons of waste or time periods less than 90 days because on-site accumulation under 40 CFR 262.34 (satellite and 90-day storage requirements) is exempt from permitting requirements under 40 CFR 264.1(g)(3), 40 CFR 265.1(c)(7), and 40 CFR 270.1(c)(2)(i).



We will focus on LQG requirements. However, remember generator status affects requirements. CESQGs are not subject to these requirements. SQGs are subject to reduced requirements as outlined on the following slides.





Satellite accumulation is not quite like it sounds. It does not involve accumulating satellites. Because the term is confusing, some facilities use "initial accumulation" instead. Satellite accumulation refers to accumulating wastes at numerous collection points, each of which is near the process that generates the waste managed in the satellite area.

Satellite accumulation areas have few requirements to follow. The requirements they must follow, however, are important and are frequent sources of enforcement. Half of the 18 states we have surveyed indicated that container management deficiencies are among their most frequent areas of noncompliance.

The first requirement we will discuss is the 55-gallon volume limit for satellite areas. States and EPA often allow several satellite accumulation areas in one workplace, provided each 55-gallon drum accumulates a unique waste stream and does not exceed the 55-gallon volume limit. However, some states do not.

The second requirement for satellite accumulation is placement of the satellite accumulation area near the operation generating the waste. Sometimes regulators will allow the satellite area to be on the other side of a door entering the room where the waste is generated. In others cases regulators consider "at or near" to mean "in the line of sight." Consult with your regulators for decisions on your accumulation areas.

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The third requirement is for the person who generates the waste to be responsible for its accumulation. The assumption behind this requirement is that the generator knows most about the waste and, therefore, can best manage the waste.

These requirements are difficult to meet for items many individuals at a facility generate in small quantities such as spent aerosol cans, batteries, and fluorescent light bulbs. EPA has implemented reduced requirements (the Universal Waste Rule) for batteries, which solve this problem. The Universal Waste Rule does not address aerosol cans and fluorescent light bulbs. Nevertheless, your state may be willing to approve "central satellite accumulation" of these wastes in accordance with the interpretation for central satellite accumulation outlined in EPA policy letter from Lowrance to Redington dated February 23, 1993 and included in the back of this module. We will discuss the Universal Waste Rule shortly.



40 CFR 262.34(c)(1)(i) requires compliance with certain interim-status facility storage standards. These include ensuring the waste is chemically compatible with the drum holding it, containers are in good condition, and containers are kept closed except when adding or removing waste from the container.

It is often difficult to determine if the container is in adequate condition to hold hazardous waste. Some dents, for example, do not impair the integrity of the container. The objective of this requirement is to ensure that containers are in good enough condition to prevent release of the waste.

Failing to keep containers closed is the basis for many enforcement actions. Most states we have consulted require that containers of liquids and solid volatile wastes (e.g., solvent-contaminated rags) be completely closed (i.e., the bung tightened or the ring of an open-head drum securely bolted). States appear to be concerned about release of volatiles and risk of spilling liquids.



40 CFR 262.34(c)(1)(ii) requires labeling containers with the words "hazardous waste" or other words identifying contents. To eliminate confusion and ensure adequate disclosure of hazards to comply with Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard, it is prudent to mark containers clearly as hazardous waste and with the hazards associated with the waste.



The Universal Waste Rule promulgated May 11, 1995 (60 FR 25492) outlines reduced requirements for these three discarded items. Important definitions for 40 CFR 273.6 include:

Battery: a device consisting of one or more electrically connected electrochemical cells that is designed to receive, store, and deliver electric energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed.

Thermostat: a temperature-control device that contains metallic mercury in an ampule attached to a bimetal sensing element, and mercury-containing ampules that have been removed from these temperature-control devices in compliance with the requirements of 40 CFR 273.13(c)(2) or 273.33(c)(2).

Pesticide: any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, other than any article that is an animal drug or feed under applicable laws.

Universal Waste Managers Include:

- Small quantity universal waste handlers
- Large quantity universal waste handlers
- Universal waste transporters
- Universal waste destination facilities

Universal Waste Handler

(a) means:

(1) a generator of universal waste; or

(2) the owner or operator of a facility, including all contiguous property, that receives universal waste from other universal waste handlers, accumulates universal waste, and sends universal waste to another universal waste handler, to a destination facility, or to a foreign destination.

(b) does not mean:

(1) a person who treats [except under the provisions of 40 CFR 273.13 (a) or (c), or 273.33 (a) or (c)], disposes of, or recycles universal waste; or

(2) a person engaged in the off-site transportation of universal waste by air, rail, highway, or water, including a universal waste transfer facility.

Large Quantity Handler of Universal Waste means a universal waste handler (as defined in this section) who accumulates 5,000 kilograms or more total of universal waste (batteries, pesticides, or thermostats, calculated collectively) at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which 5,000 kilograms or more total of universal waste is accumulated.

Small Quantity Handler of Universal Waste means a universal waste handler (as defined in this section) who does not accumulate more than 5,000 kilograms total of universal waste (batteries, pesticides, or thermostats, calculated collectively) at any time.

Universal Waste Transporter means a person engaged in the off-site transportation of universal waste by air, rail, highway, or water.

Universal Waste Destination facility means a facility that treats, disposes of, or recycles a particular category of universal waste, except those management activities described in 273.13 (a) and (c) and 273.33 (a) and (c). A facility at which a particular category of universal waste is only accumulated is not a destination facility for purposes of managing that category of universal waste.

Universal Waste Management

- Cannot dispose of, treat, or dilute universal waste
- Must prevent and respond to releases
- Must properly dispose of residues from universal waste management
- Must store no longer than 1 year

Universal waste handlers:

- may not treat or dispose of universal waste. They must transfer the waste to a hazardous waste treatment, storage, or disposal facility that is authorized to conduct these activities (40 CFR 273.11 and 273.31);
- must manage their universal wastes in structurally sound containers that prevent release of hazardous constituents in the universal waste (40 CFR 273.13 and 273.33);
- must properly characterize and dispose of wastes generated from managing universal wastes such as packing materials and spilled or removed electrolyte (40 CFR 273.17 and 273.37); and
- must limit storage of universal waste to 1 year and document compliance through container labeling, storage area labeling, inventories, or any other method of tracking the length of time each universal waste is stored on-site (40 CFR 273.15 and 273.35).

Universal Waste Management What's The Benefit?

May accumulate universal wastes:

- At a central location away from the point of generation
- Not under the control of the process operator
- Without meeting satellite accumulation requirements

Mercury-Containing and Rechargeable Battery Management Act

Extends universal waste rule benefits to collection, storage, or transportation of used rechargeable batteries, whether or not a state has adopted the universal waste rule

The universal waste rule created a challenge for universal waste generators shipping universal wastes across interstate lines. The reduced requirements for universal waste only applied in states that had adopted the rule. Thus, a generator had to be aware of his own state's requirements, requirements of states through which the waste was shipped, and consignment state requirements.

The Mercury-Containing and Rechargeable Battery Management Act effective May 13, 1996, eliminated the challenge of interstate battery transport by applying universal waste standards for rechargeable batteries in all states, regardless of whether the state had adopted the universal waste rule.



Mark the date you begin accumulating more than 55 gallons on the full drum. Ensure that the waste is transferred to a 90-day point or permitted facility within **3 days** [40 CFR 262.34(c)(2)].

EPA views the date excess accumulation begins at a satellite to apply only to satellite accumulation. If the waste is moved to a 90-day accumulation point, a new date, the 90-day accumulation start date, must be marked on the drum. Office of Solid Waste and Emergency Response (OSWER) document 9453.1985(06) located at the back of this section clarifies this position.





Container means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled (40 CFR 260.10).

Tank means a stationary device constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic), which provide structural support, and that is designed to contain an accumulation of hazardous waste (40 CFR 260.10).

Drip pads mean an engineered structure consisting of a curbed, free-draining base, constructed of non-earthen materials and designed to convey preservative kick-back or drippage from treated wood, precipitation, and surface water run-on to an associated collection system at wood preserving plants (40 CFR 260.10).

Containment building means a hazardous waste management unit that is used to store or treat hazardous waste under the provisions of 40 CFR 264 or 265 Subpart DD (40 CFR 260.10).

90-day accumulation area standards apply to all of these management units. Container storage and tank areas are, nevertheless, the 90-day accumulation area types more frequently managed at DOE facilities.



40 CFR 265.111 requires that closure:

- minimizes need for further maintenance;
- controls, minimizes, or eliminates, to the extent necessary to protect human health and environment, escape of hazardous waste from the unit; and
- complies with unit-specific closure standards that apply. Unit-specific standards for tanks, drip pads, and containment buildings are outlined in 40 CFR 265.197, 265.445, and 265.1102, respectively. Unit-specific standards have not been developed for container storage.
- 40 CFR 265.114 outlines requirements for decontamination and disposal of equipment, structures, and soils.

Containers and tanks must be marked with the words "hazardous waste" [40 CFR 262.34(a)(3)].

Containers must be clearly marked with the date accumulation begins. Other records can be used for containment buildings and drip pads [40 CFR 262.34(a)(2)]. It is important to have the label visible.



40 CFR 262.34(a) incorporates by reference certain standards that apply to interim-status permitted facilities. This slide addresses these standards.

Emergency preparedness and prevention requirements referenced in 40 CFR 265 Subpart C include a telephone to call medical and fire personnel, spill response equipment, fire extinguishers and water supply, and means to notify facility personnel.

The emergency preparedness elements are closely allied with the contingency plan, which must specify who to notify, who is in charge of responding to an incident, actions to take to respond, equipment available to respond, evacuation routes, and coordination agreements. These requirements are outlined in 40 CFR 265 Subpart D.

Training is tied to the other two because training requirements, at a minimum, must include what to do to respond to an emergency. Training must occur within 6 months of employment at the accumulation point and annually thereafter. Training records must be maintained for all accumulation point managers as long as they are employed at the accumulation point and for 3 years after they cease their responsibility as accumulation point managers. These records must include job description, job title, and verification of initial and annual refresher training. These requirements are outlined in 40 CFR 265.16.



40 CFR 262.34(a)(1) requires that on-site accumulation of wastes comply with the container management standards in 40 CFR 265 Subpart I. These standards include:

- 1. Containers must be in good condition. Containers that are in poor condition or are leaking must be overpacked, or the waste they contain must be transferred to drums that are in good condition (40 CFR 265.171).
- 2. Containers must be compatible with their contents (40 CFR 265.172).
- 3. Containers must be kept closed except when adding or removing wastes. They must be handled in a manner that prevents rupturing the container (40 CFR 265.173).
- 4. Containers must be inspected weekly for leaks and deterioration (40 CFR 265.174).
- 5. Ignitable and reactive wastes must be placed at least 50 feet from property lines (40 CFR 265.176).
- 6. Incompatible wastes cannot be placed in the same container. Waste cannot be placed in a previously used, unwashed container that held a material with which the waste is incompatible [40 CFR 265.177(a) and (b)].
- 7. Incompatible wastes cannot be stored together. They must be separated from one another by dikes, berms, walls, or other devices that would prevent their mixing in the event of a leak [40 CFR 265.177(c)].
- Last, containers used to manage hazardous wastes containing volatile organics must comply with the appropriate air emission control requirements of subparts AA, BB, and CC found in 40 CFR Part 265 (40 CFR 265.178).



40 CFR 262.34(a)(1) requires that on-site accumulation of wastes comply with the tank standards in 40 CFR 265 Subpart J [except for 40 CFR 265.197(c) and 265.200]. These standards include:

1. Tank integrity assessment, which considers design, waste characteristics, corrosion protection, age, and results of leak tests, internal inspections, or other tank integrity examination (40 CFR 265.191).

2. Design, installation, and corrosion protection for new tank systems (40 CFR 265.192). The facility must maintain records documenting appropriate design and installation.

3. Containment and release detection requirements, which include secondary containment for new tanks and phased-in secondary containment for existing tanks, depending on the age of the tank (40 CFR 265.193).

4. Operating requirements such as prevention of spills and overfills, ensuring chemicals are not placed in a tank that will compromise its integrity, and adequately responding to releases (40 CFR 265.194).

5. Response to releases must include taking the tank out of service if it is unfit for use, stopping additions to the tank, removing waste from the tank, containing visible releases to the environment, notifying of the release, and certifying repair or closure of the tank (40 CFR 265.196).

6. Daily inspection of (1) overfill/spill control equipment such as waste-feed cutoff systems, bypass systems, and drainage systems to ensure proper working condition; (2) aboveground portions of the tank; (3) data gathered from monitoring equipment and leak-detection equipment; and (4) construction materials and the area immediately surrounding the externally accessible portion of the tank system, including secondary containment structures to detect erosion or signs of releases. The owner/operator must also inspect cathodic protection systems at least annually and impressed current systems every other month. Records of these inspections must be maintained (40 CFR 265.195).

7. Ignitable and reactive wastes must only be placed in tanks in a manner to prevent their ignition or reaction. The tanks must comply with distance requirements in the National Fire Protection Association's "Flammable and Combustible Liquids Code," which is incorporated by reference into RCRA under 40 CFR 260.11. Incompatible wastes or wastes and materials must not be mixed (40 CFR 265.198 and .199).

8. Certain volatile organic wastes must be managed in tanks that comply with the air emission control standards prescribed in subparts AA, BB, and CC of 40 CFR Part 265 (40 CFR 265.202).

40 CFR 265.201 provides special requirements for SQGs.

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Air emissions standards outlined in 40 CFR 265 Subparts AA, BB, and CC were effective for 90day points on December 6, 1996 (61 *FR* 59932). Air emission standards apply to the following:

Subpart AA - process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or stream stripping operations that manage hazardous wastes with organic concentrations of at least 10 parts per million by weight (ppmw);

Subpart BB - equipment (i.e., valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange) and any control devices or systems that contain or contact hazardous wastes with organic concentrations of at least 10 percent by weight; and

Subpart CC - accumulation tanks and containers that are used to manage hazardous wastes with either an average volatile organic concentration at the point of waste origination of 100 ppmw OR an organic content that has been reduced by specified organic destruction or removal process.

If subject to these regulations, 90-day generators must equip units to ensure that no detectable organic emissions are released. For example, a tank with a fixed roof must be vented through a closed-vent system or provided with an external floating roof. Containers would have to meet Department of Transportation requirements, or the generator would have to demonstrate that the covers are leakproof.



40 CFR 270.1(c)(2)(i) provides a permit exclusion for on-site management of hazardous waste in compliance with 40 CFR 262.34. EPA interprets this exclusion to cover treatment as well as storage. This position was spelled out in the preamble to the small quantity generator regulations on March 24, 1986 [51 *FR* 10168] and is referenced in land disposal restriction (LDR) regulations [see 40 CFR 268.7(a)(4) reference to treatment under 40 CFR 262.34)].

On July 14, 1986, EPA issued an advance notice of proposed rulemaking [51 FR 25487] in which it requested comment on the 90-day storage exclusion. If the agency decides to eliminate or modify the storage exclusion, the treatment exemption would also likely be affected.





Certain types of recycling are excluded from RCRA (e.g., scrap metal recycle). For any of the uses identified in the slide, however, the recyclable waste is subject to RCRA requirements for generators, transporters, and storage facilities (see 40 CFR 261.6).

Satellite and 90-day accumulation requirements apply to recyclable materials that are considered hazardous waste until a usable product is recovered. On-site distillation of solvents is a good example. Spent solvents that qualify as hazardous waste must be stored in accordance with RCRA's storage requirements until usable solvent is recovered. The usable solvent is considered product, not waste.

An example of applying waste to the land is use as a fertilizer. [If the normal use of the waste is as a fertilizer, the waste is not considered regulated waste.]

Burning used oil and hazardous waste fuels are examples of burning for energy recovery.

Distilling spent solvent to obtain usable solvent is an example of processing to obtain a usable product.

Speculative accumulation is managing waste with the intent to recycle without actually recycling it.



40 CFR 262.34(b) states that storage exceeding 90 days is subject to the requirements of 40 CFR 264 or 265 and 270 unless EPA grants an extension. The Regional Administrator of EPA, or the delegated authority, can grant an extension up to 30 days on a case-by-case basis for "unforeseen, temporary, and uncontrollable circumstances."

Generators in Summary

- Generator standards depend on hazardous waste generation rates
- Large quantity generators have two storage options, other than permitting their facilities
- Specific requirements are imposed for storage that is exempt from permitting
- Deficiencies in meeting these on-site storage requirements are a common source of federal facility enforcement actions