

REGULATIONS GOVERNING HAZARDOUS WASTE GENERATORS

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OVERVIEW

Under RCRA, hazardous waste generators are the first link in the cradle-to-grave hazardous waste management system. All generators must determine if their waste is hazardous and must oversee the ultimate fate of the waste. RCRA Subtitle C requires generators to ensure and fully document that the hazardous waste they produce is properly identified, managed, and treated prior to recycling or disposal.



The regulations applicable to generators of hazardous waste are located in 40 CFR Part 261 and Part 262. (Generators may also be subject to land disposal restrictions (LDR) requirements as discussed in Chapter III, Land Disposal Restrictions). The degree of regulation to which each generator is subject depends to a large extent on how much waste each generator produces every calendar month. This chapter summarizes who is considered a generator and which standards apply based on waste generation rates.

WHO ARE THE REGULATED GENERATORS?

The Subtitle C regulations broadly define the term **generator** to include any person, by site, who:

- First creates or produces a hazardous waste (e.g., from an industrial process)

OR

- First brings a hazardous waste into the RCRA Subtitle C system (e.g., imports a hazardous waste into the United States).

Because generators are the first step in the RCRA Subtitle C system, it is important that they properly classify and identify their waste to ensure proper handling later in the hazardous waste management process. As a result, generators of waste must make the following determinations:

- Is the waste a solid waste?
- Is the waste excluded?
- Is the waste a listed hazardous waste?
- Is the waste a characteristic hazardous waste?

Hazardous waste generators may include various types of facilities and businesses ranging from large manufacturing operations, universities, and hospitals to small businesses and laboratories. Because these different types of facilities generate different volumes of wastes resulting in varying degrees of environmental risk, RCRA regulates generators based on the amount of waste that they generate in a calendar month. As a result, there are three categories of hazardous waste generators:

- Large quantity generators (LQGs)
- Small quantity generators (SQGs)
- Conditionally exempt small quantity generators (CESQGs).

■ Large Quantity Generators

Early in the development of the RCRA program in 1980, EPA recognized that a relatively small number of large scale hazardous waste management facilities generated the majority of the nation's hazardous waste. In order to address the facilities

that posed the greatest threat to human health and the environment, EPA focused on those generators that produced the greatest volumes of hazardous waste by establishing standards for large quantity generators.

Large quantity generators are defined as those facilities that generate:

- 1,000 kg or more of hazardous waste per calendar month (approximately 2,200 lbs)

OR

- 1 kg or more of acutely hazardous waste per calendar month (approximately 2.2 lbs).

In 2005, there were approximately 15,000 LQGs.

■ Small Quantity Generators

The LQG regulations focused on generators whose volume of waste posed the greatest threat to human health and the environment. All other generators that produced less than 1,000 kg of hazardous waste per month (or less than 1 kg of acutely hazardous waste per month) were initially exempted from the RCRA generator requirements.



Because of the concern that such exempt hazardous waste could cause environmental harm, Congress (through the Hazardous and Solid Waste Amendments (HSWA)) required that EPA also regulate those **small quantity generators** who produced more than 100 kg of hazardous waste per month. SQGs are defined as those facilities that:

- Generate between 100 kg (approximately 220 lbs) and 1,000 kg of hazardous waste per calendar month

AND

- Accumulate less than 6,000 kg (approximately 13,200 lbs) of hazardous waste at any time.

In 2001, there were approximately 200,000 SQGs.

■ Conditionally Exempt Small Quantity Generators

Until HSWA, facilities generating waste below the 100-kg cut-off point were exempt from RCRA regulatory requirements. HSWA resulted in a third category of generators, **conditionally exempt small quantity generators** (CESQGs). These generators are defined as those facilities that produce:

- 100 kg or less of hazardous waste per calendar month

OR

- 1 kg or less of acutely hazardous waste per calendar month.

Beyond the monthly generation limits, the CESQG requirements additionally limit the facility's total waste accumulation quantities to 1,000 kg of hazardous waste, 1 kg of acute hazardous waste, or 100 kg of any residue from the cleanup of a spill of acute hazardous waste at any time.

In 1997, there were between 400,000 and 700,000 CESQGs.

■ Episodic Generation

Because generator status is determined on a monthly basis, it is possible that a generator's status can change from one month to the next, depending on the amount of waste generated in a particular month. This is referred to as **episodic generation**. If a generator's status does in fact change, the generator is required to comply with the respective regulatory requirements for that class of generators for the waste generated in that particular month.

■ State Regulations

State classification of generator categories may be different from those outlined above. Some states regulate all generators of hazardous waste (i.e., there is no exempt category), while other states classify generators by waste type rather than by generated volume. Therefore, it is imperative that generators contact their respective state agency to determine if state generator regulations differ from these federal requirements.

LARGE AND SMALL QUANTITY GENERATOR REGULATORY REQUIREMENTS

LQGs and SQGs are subject to regulations contained in 40 CFR Part 262 that require each generator to:

- Identify and count waste
- Obtain an EPA ID number
- Comply with accumulation and storage requirements (including requirements for training and emergency arrangements)
- Prepare the waste for transportation
- Track the shipment and receipt of such waste
- Meet recordkeeping and reporting requirements.



Because SQGs produce a smaller portion of the nation's hazardous waste, Congress was concerned that full regulation might be economically burdensome and inappropriate. Consequently, Congress authorized EPA to reduce the regulatory requirements applicable to SQGs provided that such requirements were still protective of human health and the environment. This chapter fully discusses

these regulatory requirements and notes the differences between LQG and SQG regulatory provisions.

■ Waste Identification and Counting

In order to determine which generator standards a facility must comply with, generators are required to identify each waste that they generate and determine all applicable listings and characteristics. After determining which wastes are hazardous, each month, generators are responsible for totaling (or **counting**) the weight of all hazardous wastes generated in that month in order to determine if they will be regulated as an LQG, SQG, or CESQG for that particular month.

■ EPA Identification Numbers

One way that EPA monitors and tracks generators is by assigning each LQG and SQG a unique **EPA Identification (ID) number**. If you generate, treat, store, dispose, transport, or offer for transportation hazardous waste, you must have an ID number. Furthermore, the generator is forbidden from offering hazardous waste to any transporter or treatment, storage, and disposal facility (TSDF) that does not also have an EPA ID number. ID numbers are issued to each generator for each individual site or facility property where hazardous waste is generated. In most cases, generators request EPA ID numbers from the state implementing agency. Some states use the federal application form (EPA Form 8700-12) while other states use their own state forms.

Additional information regarding EPA ID numbers, including the forms and instructions can be found at www.epa.gov/epaoswer/hazwaste/data/form8700/forms.htm.

■ Accumulation of Waste

LQGs and SQGs are also subject to facility waste management standards. An LQG may accumulate hazardous waste on site for 90 days or less. Under temporary, unforeseen, and uncontrollable circumstances, this 90-day period may be extended for up to 30 days by the state or

EPA on a case-by-case basis. LQGs storing wastewater treatment sludges from electroplating operations (F006) may store that waste for 180 or 270 days if the waste is to be recycled.

LQGs must comply with the following requirements:

- **Proper Management** — The waste is properly accumulated in containers, tanks, drip pads, or containment buildings. Hazardous waste containers must be kept closed and marked with the date on which accumulation began. Tanks and containers are required to be marked with the words “Hazardous Waste.” The generator must ensure and document that waste is shipped off site within the allowable 90-day period.
- **Preparedness and Prevention** — LQGs are required to have an emergency coordinator, and to test and maintain emergency equipment.
- **Emergency Plan** — LQGs are required to have formal written contingency plans and emergency procedures in the event of a spill or release.
- **Personnel Training** — Facility personnel must be trained in the proper handling of hazardous waste through an established training program.

Considering the lesser risks posed by the generation of smaller quantities of hazardous waste, SQGs are subject to less extensive facility waste management provisions. An SQG may accumulate hazardous waste on site for 180 days or less. SQGs transporting hazardous waste for off-site treatment, storage, or disposal over distances greater than 200 miles may accumulate waste for up to 270 days. SQGs must comply with the following requirements:

- **Proper Management** — The waste is properly accumulated in either tanks or containers marked with the words “Hazardous Waste.” Containers must also be kept closed and marked with the date on which accumulation began.
- **Emergency Plan** — The SQG requirements include specified emergency responses; however, SQGs are not required to have written contingency plans. They are required to ensure that an emergency coordinator is on the

premises, or on-call at all times, and have basic facility safety information readily accessible.

- Personnel Training — SQGs are not required to have an established training program but must ensure that employees handling hazardous waste are familiar with proper handling and emergency procedures.

■ Preparation for Transport Regulations

Pre-transport regulations are designed to ensure safe transportation of hazardous waste from the point of origin to the ultimate disposal site. In developing hazardous waste pre-transport regulations, EPA adopted the Department of Transportation's (DOT) regulations for packaging, labeling, marking, and placarding. These DOT regulations can be found at 49 CFR Parts 172, 173, 178, and 179. DOT regulations require:

- Proper packaging to prevent leakage of hazardous waste during both normal transport conditions and potentially dangerous situations (e.g., if a drum falls off of a truck)
- Labeling, marking, and placarding of the packaged waste to identify the characteristics and dangers associated with its transport.

These pre-transport regulations only apply to generators shipping waste off site for treatment, storage, or disposal. Transportation on site is not subject to these pre-transport requirements.

■ The Manifest

As previously discussed, the Subtitle C program is designed to manage hazardous waste from cradle to grave. The Uniform Hazardous Waste Manifest (*EPA Form 8700-22*) plays a crucial part in this management system. (A sample of the manifest can be found in Appendix A.) The **manifest** allows all parties involved in hazardous waste management (e.g., generators, transporters, TSDFs, EPA, state agencies) to track the movement of hazardous waste from the generator's site to the site where the waste will be treated, stored, or disposed. A RCRA

manifest contains the following federally required information:

- Name, address, and EPA ID number of the hazardous waste generator, transporter(s), and designated facility
- DOT description of the waste's hazards
- Quantities of the wastes transported and container type.

Each manifest also contains a certification that states:

- The shipment has been accurately described and is in proper condition for transport
- The generator has a waste minimization program in place at its facility to reduce the volume and toxicity of hazardous waste to the degree economically practicable, as determined by the generator
- The treatment, storage, or disposal method chosen by the generator is the most practicable method currently available that minimizes the risk to human health and the environment.

Each time a waste is transferred (e.g., from a transporter to the **designated facility** or from a transporter to another transporter), the manifest must be signed to acknowledge receipt of the waste. A copy of the manifest is retained by each individual in the transportation chain. Once the waste is delivered to the designated facility, the owner and operator of that facility must sign and return a copy of the manifest to the generator. This system ensures that the generator has documentation that the hazardous waste has arrived at its ultimate destination. To further ensure the safe transport of hazardous waste, a generator may not offer waste for transport unless that transporter has an EPA ID number.

In March 2005, EPA finalized revisions to the manifest form and regulations. EPA standardized the content and format of the current manifest form and the continuation sheet so that the same form could be used by waste handlers nationwide. EPA also improved tracking procedures for hazardous waste shipments that destination facilities (i.e., TSDFs) reject, wastes consisting of residues from

non-empty hazardous waste containers, and wastes entering or leaving the United States. Finally, EPA established a new acquisition process for obtaining the new manifest form. Waste handlers may obtain new forms from any source that has registered with EPA to print and distribute the form.

■ Recordkeeping and Reporting

The recordkeeping and reporting requirements for LQGs and SQGs provide EPA and the states with a method to track the quantities of hazardous waste generated and the movement of hazardous wastes. The generator regulations in 40 CFR Part 262 contain four primary recordkeeping and reporting requirements:

- Biennial reporting
- Information collection requests
- Exception reporting
- Three-year record retention.

Biennial Reporting

The Office of Solid Waste (OSW) relies on data to determine the best ways to develop, implement, and enforce the RCRA program, and to assess its success. EPA, in partnership with the states, biennially collects information about the generation, management, and final disposition of hazardous wastes regulated under RCRA. When regulated parties provide their data, the state or EPA regional office enters the data into a computer database. After review to ensure the quality of the data, OSW enters it into a data system called RCRAInfo, where states and EPA can access it. EPA uses the information collected to:

- Provide EPA and the states with an understanding of hazardous waste generation and management in the United States
- Help EPA measure the quality of the environment, such as monitoring industry compliance with the regulations and evaluating waste minimization efforts taken by industry, and
- Communicate national hazardous waste information to the public, government agencies,

and the regulated community, primarily through publication of the National Biennial RCRA Hazardous Waste Reports.

For more information, please go to the National Biennial RCRA Hazardous Waste Report, available at www.epa.gov/epaoswer/hazwaste/data/biennialreport/index.htm

Information Collection Requests

In order to collect the information that OSW needs to develop, implement, and enforce the RCRA program, and to assess its success, OSW requires members of the regulated community to submit data. In order for EPA to legally enforce such a requirement, the forms used to collect the data must be approved by the President's Office of Management and Budget (OMB) through the Information Collection Request (ICR) process. ICRs are usually approved for only three years, after which EPA must apply to renew them. This process, laid out in the Paperwork Reduction Act, requires an ICR before collecting the same or similar information from ten or more members of the public. An ICR:

- Describes the information to be collected
- Gives the reason the information is needed, and
- Estimates the time and cost "burden" for the public to answer the request.

Exception Reporting

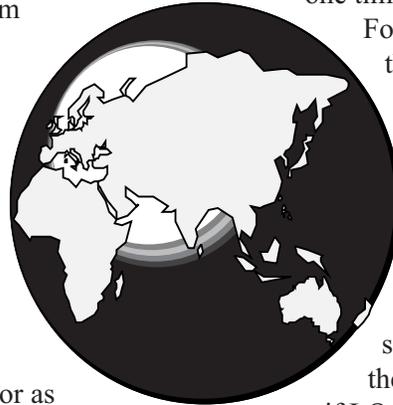
The RCRA regulations ensure that the transport of hazardous waste from its point of generation to its point of treatment, storage, or disposal is documented through a manifest system. This system requires the designated facility to return a signed and dated copy of the manifest to the generator in order to acknowledge receipt of the waste. If the generator does not receive this paperwork, additional steps need to be taken in order to locate the waste. As a result, LQGs who transport waste off site but do not receive a signed and dated copy of the manifest from the designated facility within 45 days from the date on which the initial transporter accepted the waste, must submit an **exception report** to the EPA Regional Administrator. The exception report must

describe efforts made to locate the waste and the results of those efforts.

SQGs who do not receive a signed and dated copy of the manifest from the designated facility within 60 days must send a copy of the original manifest to the EPA Regional Administrator with a note indicating that they have not received a return copy.

Record Retention

Generators must keep a copy of each biennial report and any exception reports for at least three years from the due date of the report. Generators are also required to keep copies of all manifests for three years, or until a signed and dated copy of the manifest is received from the designated facility. The manifest received from the designated facility must be kept for at least three years from the date on which the hazardous waste was accepted by the initial transporter. Finally, records of waste analyses and determinations performed by the generator must be kept for at least three years from the date the waste was last sent to an on-site or off-site TSDf. These retention periods may be extended automatically during the course of any unresolved enforcement action regarding the regulated activity, or as requested by the EPA Administrator.



CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS

While CESQGs are not subject to the requirement to obtain an EPA ID number, comply with accumulation and storage requirements, follow the manifest system, or meet recordkeeping and reporting requirements, they are subject to limited generator waste management standards. CESQGs may also be subject to DOT requirements. CESQGs must identify their hazardous waste, comply with storage limit requirements, and ensure waste treatment or disposal in an on-site or off-site:

- Permitted or interim status hazardous waste TSDf
- State hazardous waste facility
- State permitted, licensed, or registered solid waste disposal facility
- State MSWLF
- Recycling facility
- Universal waste facility.

QUANTITY AND TIME LIMITS

LQGs, SQGs, and CESQGs are subject to specific quantity and time limits that restrict the amount of waste that may be stored on site at any one time, and the length of such storage.

For example, SQGs may not store more than 6,000 kg of hazardous waste on site at any one time, and CESQGs may not store more than 1,000 kg of hazardous waste on site at any one time. LQGs must move all of the waste that they generate off site within 90 days, while SQGs have 180 days to move all waste off site. If SQGs or CESQGs exceed their respective storage quantity limits, or if LQGs or SQGs exceed their respective accumulation time limits, the facility becomes a storage facility subject to all applicable requirements for TSDf (including permitting) unless they have received an accumulation time limit extension from EPA or their state.

Recently, EPA promulgated less stringent regulations for generators of F006 waste in order to promote legitimate recycling of metal-bearing electroplating sludges. As a result, large quantity generators are allowed to accumulate F006 sludges up to 180 or 270 days without a permit provided they meet certain conditions.

INTERNATIONAL SHIPMENTS

Not all hazardous wastes that are managed in the United States originate in this country. Similarly,

not all wastes generated in the United States are managed exclusively in this country. To ensure that such international shipments are handled in a manner that protects human health and the environment, RCRA contains management provisions for both hazardous waste imports and exports. Because such shipments are also governed by various international treaties and agreements, the RCRA regulations include provisions which implement these treaties and agreements.

■ Hazardous Waste Imports

Under RCRA, any person importing a hazardous waste into the United States from a foreign country is subject to the hazardous waste generator standards. As a result, an importer is subject to all generator requirements, including the completion of a hazardous waste manifest. Subpart F of Part 262 contains special instructions for importers completing the manifest.

In addition, any TSDFs, or interim status TSDFs, that intend to receive imported hazardous waste from a foreign source must notify the EPA Regional Administrator in writing at least four weeks prior to receiving the first shipment of hazardous waste. Any subsequent shipments of the same waste from the same foreign source do not require this notification. Once the TSDF receives import shipments of hazardous waste, the site must send a copy of each shipment's manifest to EPA within 30 days of shipment delivery, and include details on the foreign generators and imported wastes in their normal Biennial Report submission. If the import shipment is from an Organization for Economic Cooperation and Development (OECD) country (except Canada or Mexico), under 262 Subpart H, the TSDF would also have to send a copy of the OECD tracking document to EPA and to the competent authorities of all other concerned countries within three working days of shipment delivery.

■ Hazardous Waste Exports

RCRA also contains specific requirements for hazardous waste exports. For example, there are specific notification requirements for exports of

hazardous wastes that prohibit the export of hazardous waste unless the exporter obtains written consent from the receiving country prior to shipment. This written consent must be attached to the manifest accompanying each waste shipment.

To export a hazardous waste, the exporter must notify the EPA Administrator 60 days prior to when the waste is scheduled to leave the United States. This notification may cover export activities extending over a 12-month period, unless information in the notification changes. If the importing country agrees to accept the hazardous waste, EPA will send an **Acknowledgment of Consent** to the exporter, who may then export the waste to the accepting country.

Subpart E of Part 262 contains the detailed export requirements for hazardous waste shipments that would not be governed by the OECD multilateral agreement (as discussed later in this chapter). Subpart H of Part 262 contains the export requirements for shipments destined for an OECD country, with the exception of Canada and Mexico.

■ International Treaties

Two international treaties may affect U.S. hazardous waste import and export practices. They are the Basel Convention and the OECD Council Decision.

Basel Convention

The **Basel Convention** establishes standards for the transboundary movement of hazardous waste, solid waste, and municipal incinerator ash, including notice to and written confirmation from the receiving country prior to export. As of September 2007, approximately 170 countries were party to the Convention. Although the United States is not currently a party to the Basel Convention, the Convention still affects U.S. importers and exporters in the following manner. Parties to the Basel Convention cannot trade Basel-covered wastes with nonparties in the absence of a bilateral or multilateral agreement (in this case, a separate agreement between countries or groups of countries to govern the transboundary movement of waste).

As a result, U.S. businesses, as a practical matter, can only import such wastes from and export such wastes to those Basel countries with which the U.S. government has negotiated a separate waste trade agreement. Those countries with which the United States has entered into such bilateral agreements for import and export include Canada and Mexico. Those countries with which the United States has entered into a bilateral agreement for import include Malaysia, Costa Rica, and the Philippines.

Organization for Economic Cooperation and Development Council Decision

The **OECD Council Decision** is another multilateral agreement that establishes procedural and substantive controls for the import and export of hazardous waste recyclables between OECD member nations. The agreement is intended to ease the trade of such recyclables and minimize the possibility that such wastes will be abandoned or handled illegally. As of 2006, there were 30 member countries in the OECD. Since the United States is a member of OECD and is a party to the Decision, U.S. businesses can trade recyclables with other member OECD nations (including those that are also party to the Basel Convention). However, transboundary movement between the United States and the countries of Canada, Mexico, Costa Rica, Malaysia, and the Philippines is still governed by each individual bilateral agreement and not by the OECD Decision.

In May 2002, OECD published a decision that made revisions to the controls of transboundary movements of waste destined for recovery operations. Because OECD council decisions are legally binding for member countries, this decision has to be implemented in all member countries through the enactment of national legislation. As a result, EPA is in the process of making changes to the existing regulations in 40 CFR Part 262, Subpart H.

FARMER EXCLUSION

Although a farmer may be a generator of hazardous waste, waste pesticides disposed of on a farmer's own property in compliance with specified

waste management requirements, including the disposal instructions on the pesticide label, are not subject to the generator requirements. This exclusion is intended to prevent the double regulation of farmers under both RCRA and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

SUMMARY

Hazardous waste generators regulated under RCRA fall into three categories, based on the amount of hazardous waste generated per calendar month:

- LQGs
- SQGs
- CESQGs.

LQGs and SQGs must:

- Identify and count waste
- Obtain an EPA ID number
- Comply with accumulation and storage requirements (including requirements for training and emergency arrangements)
- Prepare the waste for transportation
- Track the shipment and receipt of such waste
- Meet recordkeeping and reporting requirements.

LQGs and SQGs may also be subject to LDR requirements.

CESQGs are not subject to most of the generator requirements applicable to LQGs and SQGs, but they must identify their hazardous waste, comply with storage limit requirements, and ensure waste treatment or disposal in an on-site or off-site:

- Permitted or interim status hazardous waste TSDF
- State hazardous waste facility
- State permitted, licensed, or registered solid waste disposal facility
- State municipal solid waste landfill

- Recycling facility
- Universal waste facility.

Any person importing hazardous waste into the United States from a foreign country is subject to hazardous waste generator standards. RCRA also contains specific requirements for hazardous waste exports. Importers and exporters must also comply with the provisions of international trade treaties, such as the Basel Convention and the OECD Council Decision.

Because farmers disposing of certain pesticide wastes on their own land are subject to regulation under both RCRA and FIFRA, RCRA specifically excludes such farmers from the generator requirements.

ADDITIONAL RESOURCES

Additional information about hazardous waste generators can be found at www.epa.gov/epaoswer/osw/gen_trans/generate.htm.