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AN IN-DEPTH LOOK...

What is Construction and Demolition (C&D) debris?

C&D debris is a type of waste that is produced when new structures are built and when existing structures are renovated or demolished. C&D debris may consist of: (1) non-hazardous waste; (2) hazardous waste; and (3) waste that contains hazardous components. The U.S. Environmental Protection Agency (EPA) regulates C&D debris that is (or that contains) hazardous waste. While states have the sole responsibility for managing non-hazardous C&D debris, some states also have received permission from EPA to implement a hazardous waste program. State hazardous waste programs are consistent with, and at least as stringent as, the federal program. Contractors must know how to identify hazardous waste and how to manage it in a manner that is consistent with federal and/or state requirements. Following is an overview of the applicable federal rules. *For information on state-specific hazardous waste requirements, contact the appropriate state agency. A list of state agency contacts is available on the Internet at www.epa.gov/epaoswer/hotline/rcntcts.htm.*

What is RCRA? The Resource Conservation and Recovery Act (RCRA) is a federal law that regulates facilities that generate, transport, treat, store, and dispose of hazardous waste (42 USC Section 6901 *et seq.*). RCRA directs EPA to enact regulations controlling the management of hazardous wastes from the point of generation to final deposition (40 CFR Parts 260 to 279). Construction, demolition and renovation contractors are generally considered to be hazardous waste generators. RCRA authorizes EPA to bring civil, criminal, or administrative enforcement actions against hazardous waste generators for RCRA violations. *The full text of RCRA and the regulations can be found on the Internet at www.epa.gov/epaoswer/hotline/rcra.htm. For specific questions, contact the RCRA Hotline at (800) 424-9346.*

The Hazardous Waste Identification Process. Before C&D debris is disposed of, recycled, or used as fill material it must be evaluated to determine if it is a hazardous waste. To be a hazardous waste under the federal RCRA regulations, C&D debris must first be classified as a solid waste. The term "solid waste" means any waste, whether it is a solid, semisolid, or liquid. Solid wastes are "hazardous" if they are specifically named on one of four lists (called "listed wastes") or if they exhibit one of four characteristics (called "characteristic wastes"). *To learn more about hazardous waste identification,*

download EPA's Training Module from the Internet at www.epa.gov/epaoswer/hotline/rmods.htm.

Listed Waste. Wastes are listed as hazardous if they are harmful—regardless of their concentration—to human health and the environment. The lists are divided into the following four categories:

- The F list. Wastes from certain industrial or manufacturing processes—called non-specific source wastes (40 CFR Section 261.31). Construction wastes in this category include spent solvents containing trichloroethylene, xylene, toluene, methylene chloride, or methyl ethyl ketone (MEK) that are used to clean spray guns or strip paint.
- The K list. Wastes from a specific source or industry such as a petroleum refinery (40 CFR Section 261.32). K wastes are not typically generated in the construction, demolition, and renovation industry.
- The P and the U lists. Hazardous pure or commercial grade formulations of certain unused chemicals. (40 CFR Section 261.33). Examples include excess chemical solutions and container residues such as unused toluene, acetone, methylene chloride, xylene, or MEK. If any of these unused chemical solutions are spilled onto land, the resulting contaminated soil also may be considered hazardous waste.

Characteristic Waste. EPA also regulates wastes that exhibit certain characteristics, even if they do not appear on one of the hazardous waste lists. A waste may be considered hazardous if it is:

- Ignitable. Ignitable wastes create fires under certain conditions or they are spontaneously combustible (40 CFR 262.21). Examples include solvents used in carpentry and flooring, paint and paint thinner, used oil sent for disposal, adhesives, coatings, mineral spirits, and asphalt wastes.
- Corrosive. Corrosive wastes are acids or bases that are capable of corroding metal containers such as storage tanks, drums, and barrels (40 CFR 261.22). The construction, demolition, and renovation industry does not generate corrosive waste.
- Reactive. Reactive wastes are unstable under normal conditions (40 CFR 261.23). They cause explosions, toxic fumes, gases, or vapors when mixed with water. The construction, demolition, and renovation industry does not generate reactive waste.
- Toxic. Toxic wastes are harmful or fatal when ingested or absorbed (40 CFR 261.24). Toxicity is defined through a laboratory procedure called the Toxicity Characteristic Leaching Procedure (TCLP).

Toxic hazardous wastes found in C&D debris include lead-based paint, lead pipe, treated wood, mercury-containing fluorescent lamps, and asphalt wastes that contain benzene.

In recent news, industry officials are asking EPA to adopt a new approach for determining when a waste is hazardous based on the amount of known hazardous constituents that a waste contains. Stakeholders find the “characteristics” approach overly broad, agreeing that a “concentration-based” approach would be more accurate. In a rule proposed earlier this year, EPA listed 17 new paint wastes as hazardous under RCRA and based the listings on the concentration-based approach.

EPA Finalizes 2001 Hazardous Waste Identification Rule (HWIR) & Provides Relief for Some Mixed Wastes. EPA recently finalized a rule that restates the “mixture and derived-from” rules—officially known as the HWIR (66 FR 27266, May 16, 2001). The new rules replace the 1980 HWIR that was vacated in 1991 by the D.C. Court of Appeals because EPA had failed to provide proper notice and opportunity for comment.

The new mixture and derived-from rules retain the requirement that a listed hazardous waste remains regulated as a hazardous waste even when it is mixed with a non-hazardous waste (i.e., dilution is not the solution). Plus, waste generated from the treatment, storage, or disposal of a listed hazardous waste remains regulated as a hazardous waste. In addition, EPA finalized two new exemptions that narrow the scope of these requirements. The first is an expanded exclusion for mixtures and/or derivatives of wastes listed solely for the ignitability, corrosivity and/or reactivity characteristics. The second is an exemption for “mixed wastes” (i.e., wastes that are both hazardous and radioactive) when they meet certain conditions and eligibility criteria. The rule takes effect on August 14. The exclusions will not be in effect in authorized states unless and until the states adopt it, since it is less stringent than the existing rules.

In a separate rule published the same day, EPA has relieved generators of the following mixed wastes from many RCRA requirements: low-level mixed waste; naturally occurring radioactive material; and accelerator-produced radioactive material that qualifies as a listed or characteristic waste (66 FR 27217, May 16, 2001). The final rule becomes effective on November 13. Authorized states must adopt the rule before it takes effect in a particular state.

How Are Hazardous Waste Generators Categorized?

If your construction, demolition, or renovation company generates hazardous waste, it must be managed according to the regulations that apply to your specific generator type. Hazardous waste generators are divided into three categories based on how much waste they generate in a calendar month.

- Large Quantity Generators (LQGs). LQGs generate greater than or equal to 1,000 kg (approximately 2,200 lbs.) of hazardous waste per month, or greater than 1 kg (approximately 2.2 lbs.) of acutely hazardous waste per month.
- Small Quantity Generators (SQGs). SQGs generate greater than 100 kg (approximately 220 lbs.) but less than 1,000 kg of hazardous waste per month.
- Conditionally-Exempt Small Quantity Generators (CESQGs). CESQGs generate less than or equal to 100 kg (approximately 220 lbs.) of hazardous waste per month, and less than or equal to 1 kg (approximately 2.2 lbs.) of acutely hazardous waste per month. Most construction firms are CESQGs.

Example: How to Manage Hazardous Waste Generated on a Construction Job Site? Suppose you just finished painting and refurbishing several buildings at a renovation site. In the process, you have generated numerous almost-empty cans of solvent, paints, and pigments, as well as rags contaminated with spent solvents. You need to discard all of these items. How should you proceed?

- (1) Identify Waste. Run tests or use your knowledge to determine if the wastes you generated on-site are hazardous. In this example, the paints and waste solvents are regulated under RCRA as ignitable hazardous wastes. *Test procedures are described in an EPA document—Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, SW-846—available on the Internet at www.epa.gov/sw-846/sw846.htm.*
- (2) Count Waste. Determine how much hazardous waste you have produced in a calendar month (40 CFR 261.5). Do not include waste that may be exempt from regulation such as chromated copper arsenate (CCA)-treated wood, household hazardous waste, mercury-containing batteries, thermostats, and lamps managed under the Universal Waste Program (40 CFR 261.4).
- (3) Determine Generator Status. Based on the waste counted, determine your generator status. In this example, you have produced less than 100 kg in the past month, which means you are a CESQG in this calendar month.
- (4) Comply with Accumulation Standards. The on-site accumulation quantities and time limits will depend on the generator’s status. CESQGs may not store more than 1,000 kg (2,200 lbs.) of hazardous waste or more than 1 kg (approximately 2.2 lbs.) of acutely hazardous waste (or more than 100 kg of spill residue from an acute hazardous waste) on-site at any time. Accumulation time limits do not apply to CESQGs.
- (5) Follow the U.S. Department of Transportation (DOT) Shipping Standards. Before shipping waste off-site for treatment, storage, or disposal, you may need to package, label, and mark waste containers in accordance with all applicable DOT requirements. *To find out more, call the DOT Hotline at (800) 467-4922.*

- (6) Send Waste Off-Site for Treatment, Storage and/or Disposal. CESQGs must ensure delivery of their hazardous waste to a treatment, storage, or disposal facility that is either:
- Federally permitted;
 - Located in an authorized state that is authorized to manage hazardous waste;
 - Permitted, licensed, or registered by a state to manage municipal or industrial solid waste;
 - Qualified to use, reuse, or legitimately recycle the waste; or
 - A “universal waste” handler or destination facility subject to the universal waste requirements (40 CFR Part 273).

The example above illustrates one potential construction waste scenario that is covered by RCRA. It details the steps a CESQG must follow to comply with the federal hazardous waste requirements. Note that some states do not recognize the CESQG class, while others have additional requirements for CESQGs beyond what RCRA requires (i.e., storage requirements and pre-transportation requirements). *Contact your state environmental agency for the CESQG requirements in your state. A list of state agency contacts is available on the Internet at www.epa.gov/epaoswer/hotline.rcncts.htm.*

What Additional Requirements Apply to SQGs and LQGs? It is important to remember that the RCRA regulatory requirements become increasingly stringent as

also would clarify the procedures used for rejected wastes and international shipments. These revisions would save contractors who handle hazardous waste time and money.

The Uniform Hazardous Waste Manifest is a form prepared by all generators (except CESQGs) who transport hazardous waste for off-site treatment, recycling, storage, or disposal. It contains information on the type and quantity of the waste being transported, instructions for handling the waste, and signature lines for all parties involved in the disposal process. Contractors should not sign the manifest if they have not generated the waste. *For more information, log on to EPA's Office of Solid Waste website at www.epa.gov/epaoswer/hazwaste/gen/manifest/index.htm.*

EPA Considers Rule to Exempt Recycled Material From RCRA. EPA is considering a rule that would for the first time exempt materials from the definition of a solid waste if they are recycled. Sources say EPA Administrator Christine Todd Whitman appeared interested in the idea when Office of Solid Waste staff

the volume of waste generated grows. Unlike CESQGs, SQGs and LQGs must:

- Adhere to stringent on-site accumulation quantities and time limits.
- Accumulate waste in a regulated hazardous waste unit (i.e., tanks, containers, drip pads or containment building).
- Obtain an EPA identification number, prepare a Uniform Hazardous Waste Manifest (see below), and comply with DOT shipping requirements.
- Designate one facility on the manifest that is permitted to handle the waste described on the manifest. A “designated facility” is a federally or state-permitted treatment, storage, or disposal facility or a recycling facility.
- Obtain personnel training, develop a contingency plan and emergency procedures, and file a biennial report.

For additional information on how to manage hazardous waste and other environmental liabilities, purchase AGC's Guidebook to Managing Environmental Exposures online at www.constructionenvironment.org (click on “Environmental Publications”).

Proposed Changes to Manifest Rules Would Cut Contractor's Workload. EPA has proposed a new rule that will improve the Uniform Hazardous Waste Manifest system by standardizing the content and appearance of the manifest form, and by providing waste handlers with the option to complete, sign, and transmit manifests electronically (66 FR 28240, May 22, 2001). The proposal raised the issue. Currently, EPA is putting together a number of options, including a rulemaking.

Learn How To Reduce the Amount of Waste You Generate. Construction, demolition, and renovation companies can save a significant amount of money by reusing, recycling, donating, and otherwise reducing the amount of C&D debris they throw away. Are you thinking about separating C&D materials from your regular waste stream for recycling but don't know where to start? The Solid Waste Association of North America (SWANA) in conjunction with the Construction Materials Recycling Association (CMRA) has designed a course that will suit your needs. *Classes will be held on October 14-16 in Baltimore, MD, and on March 19-23 in Las Vegas, NV. To register call 1 800-GOSWANA.*

On a related note, the Thermostat Recycling Corp. (TRC) recently expanded its used mercury-recycling program to all states except Alaska and Hawaii. TRC collects old thermostats, which saves you the cost of expensive disposal and treatment. *For more information, contact TRC's Ric Erdheim at (703) 841-3249.*