

Solid Waste Disposal Act and Resource Conservation & Recovery Act, United States

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This article has been reviewed and approved by the following Topic Editor: Lori Zaikowski (other articles)

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Introduction

The **Resource Conservation and Recovery Act of 1976** (RCRA) established the federal program regulating solid and hazardous waste management. RCRA actually amends earlier legislation (the Solid Waste Disposal Act of 1965), but the amendments were so comprehensive that the act is commonly called RCRA rather than its official title.

The act defines solid and hazardous waste, authorizes EPA to set standards for facilities that generate or manage hazardous waste, and establishes a permit program for hazardous waste treatment, storage, and disposal facilities. RCRA was last reauthorized by the Hazardous and Solid Waste Amendments of 1984. The amendments set deadlines for permit issuance, prohibited the land disposal of many types of hazardous waste without prior treatment, required the use of specific technologies at land disposal facilities, and established a new program regulating underground storage tanks. The authorization for appropriations under this act expired September 30, 1988, but funding for the Environmental Protection Agency's programs in this area has continued; the act's other authorities do not expire.

History

Solid Waste Disposal/Resource Conservation and Recovery Act and Major Amendments (42 U.S.C. 6901-6991k) Year - Act - Public Law Number

- 1965 Solid Waste Disposal Act P.L. 89-272, Title II
- 1970 Resource Recovery Act of 1970 P.L. 91-512
- 1976 Resource Conservation and Recovery Act of 1976 P.L. 94-580
- 1980 Used Oil Recycling Act of 1980 P.L. 96-463
- 1980 Solid Waste Disposal Act Amendments of 1980 P.L. 96-482
- 1984 Hazardous and Solid Waste Amendments of 1984 P.L. 98-616
- 1988 Medical Waste Tracking Act of 1988 P.L. 100-582
- 1992 Federal Facility Compliance Act of 1992 P.L. 102-386
- 1996 Land Disposal Program Flexibility Act of 1996 P.L. 104-119

Background

Federal solid waste law has gone through four major phases. The Solid Waste Disposal Act (passed in 1965 as Title II of the Clean Air Act of 1965) focused on research, demonstrations, and training. It provided for sharing with the states the costs of making surveys of waste disposal practices and problems, and of developing waste management plans. The Resource Recovery Act of 1970 changed the whole tone of the legislation from efficiency of disposal to concern with the reclamation of energy and materials from solid waste. It authorized grants for demonstrating new resource recovery technology, and required annual reports from the Environmental Protection Agency (EPA) on means of promoting recycling and reducing the generation of waste. In a third phase, the federal government embarked on a more active, regulatory role, embodied in the Resource Conservation and Recovery Act of 1976. RCRA instituted the first federal permit program for hazardous waste and prohibited open dumps. In a fourth phase, embodied in the Hazardous and Solid Waste Amendments of 1984, the federal government attempted to prevent future cleanup problems by prohibiting land disposal of untreated hazardous wastes, setting liner and leachate collection requirements for land disposal facilities, setting deadlines for closure of facilities not meeting standards, and establishing a corrective action program.

Regulation of Hazardous Waste

Subtitle C of RCRA created the hazardous waste management program. A waste is hazardous if it is ignitable, corrosive, reactive, or toxic, or appears on a list of about 100 industrial process waste streams and more than 500 discarded commercial products and chemicals. The 1976 law expanded the definition of "solid waste," of which hazardous waste is a subset, to include "sludge . . . , and other discarded material, including solid, liquid, semi-solid, or contained gaseous material." The broadened definition is particularly important with respect to hazardous wastes, at least 95% of which are liquids or sludges. Some wastes are specifically excluded, however, including irrigation return flows, industrial point source discharges (regulated under the Clean Water Act), and nuclear material covered by the Atomic Energy Act.

Under RCRA, hazardous waste generators must comply with regulations concerning record keeping and reporting; the labeling of wastes; the use of appropriate containers; the provision of information on the wastes' general chemical composition to transporters, treaters, and disposers, and the use of a manifest system. Facilities generating less than 1,000 kilograms of waste per month were initially exempt from the regulations; the 1984 amendments to RCRA lowered that exemption

to 100 kilograms per month, beginning in 1986.

Transporters of hazardous waste must also meet certain standards. These regulations were coordinated by EPA with existing regulations of the Department of Transportation. A manifest system, effective since 1980, is used to track wastes from their point of generation, along their transportation routes, to the place of final treatment, storage, or disposal.

Treatment, storage, and disposal (TSD) facilities are required to have permits, to comply with operating standards, to meet financial requirements in case of accidents, and to close their facilities in accordance with EPA regulations. The 1984 amendments imposed a number of new requirements on TSD facilities with the intent of minimizing land disposal. Bulk or noncontainerized hazardous liquid wastes are prohibited from disposal in any landfill, and severe restrictions are placed on the disposal of containerized hazardous liquids, as well as on the disposal of nonhazardous liquids in hazardous waste landfills. The land disposal of specified highly hazardous wastes was phased out over the period from 1986 to 1990. EPA was directed to review all wastes that it has defined as hazardous and to make a determination as to the appropriateness of land disposal for them. Minimum technological standards were set for new landfills and surface impoundments requiring, in general, double liners, a leachate collection system, and groundwater monitoring.

States are encouraged and financially assisted to assume EPA's hazardous waste program, which went into effect November 19, 1980. Virtually all the states are doing so: as of December 2002, 48 states (all but Alaska and Iowa) had received final authorization to run the pre-1984-amendment elements of the program. Many of the states had received authorization to run post-1984 components of the program, as well, although the degree of authorization varies from state to state.

In order to receive final authorization, a state's program must be equivalent to, no less stringent than, and consistent with the federal program. As EPA develops new regulations, a state's program must be reviewed to determine whether the state has authority to enforce comparable requirements.

Even where states do not have authorization, they often participate in running the program under what are called Cooperative Arrangements. The Cooperative Arrangements provide financial assistance and allow the states to participate in specific aspects of the program (e.g., assisting in permit evaluation, conducting inspections, or operating the manifest system), while working toward full authorization.

Solid Waste Provisions

The major (non-hazardous) solid waste provision in RCRA is the prohibition of open dumps. This prohibition is implemented by the states, using EPA criteria to determine which facilities qualify as sanitary landfills and may remain open. EPA's criteria were originally promulgated in 1979; open dumps were to close or be upgraded by September 13, 1984.

In the 1984 amendments to RCRA, EPA was required to revise the sanitary landfill criteria for facilities that receive small quantity generator hazardous waste or hazardous household waste. Using this authority, the agency promulgated revised regulations applicable to municipal solid waste landfills in October 1991, with an effective date of October 9, 1993, for most provisions. In general, the new criteria require liners, leachate collection, groundwater monitoring, and corrective action at municipal landfills.

Other solid waste provisions authorized in RCRA include financial and technical assistance for states and local governments (most such assistance ended in FY1981 due to overall budget cutbacks); research, development, and demonstration authority (most of which also fell victim to budget cutbacks); and a procurement program, the goal of which is to stimulate markets for recycled products by requiring federal departments and agencies to "buy recycled."

While EPA is the lead agency under RCRA, the Department of Commerce is given several responsibilities for encouraging greater commercialization of resource recovery technology. The department has not played an active role, however.

Underground Storage Tanks

To address a nationwide problem of leaking underground storage tanks (USTs), Congress established a leak prevention, detection, and cleanup program through the 1984 RCRA amendments and the 1986 Superfund Amendments and Reauthorization Act (SARA).

The 1984 RCRA amendments created a federal program to regulate USTs containing petroleum and hazardous chemicals to limit corrosion and structural defects, and thus minimize future tank leaks. The law directed EPA to set operating requirements and technical standards for tank design and installation, leak detection, spill and overflow control, corrective action, and tank closure. The UST program (RCRA Subtitle I) is administered primarily by states. It requires registration of most underground tanks, bans the installation of unprotected tanks, sets federal technical standards for all tanks, coordinates federal and state regulatory efforts, and provides for federal inspection and enforcement.

In 1986, Congress created a petroleum UST response program by amending Subtitle I of RCRA through SARA (P.L. 99-499). Prior to SARA, EPA lacked explicit authority to clean up contamination from leaking underground petroleum tanks as Congress had specifically excluded petroleum products (although not petrochemicals) from the Superfund law. The 1986 provisions authorized the federal government to respond to petroleum spills and leaks, and created a Leaking Underground Storage Tank Trust Fund to fund cleanup of leaks from petroleum USTs in cases where the UST owner or operator does not clean up a site. The LUST Trust Fund provides money for EPA to administer the program and for states to oversee cleanups, take enforcement actions, and undertake cleanups themselves when necessary. The money in the fund is derived primarily from a 0.1 cent-per-gallon federal tax on motor fuels and several other petroleum products.

The 1986 amendments also directed EPA to establish financial responsibility requirements for UST owners and operators to cover costs of taking corrective action and to compensate third parties for injury and property damage caused by leaking tanks. The law required EPA to issue regulations requiring tank owners and operators selling petroleum products to demonstrate minimum financial responsibility. The regulations require insurance coverage of \$1 million, or alternatively, owners and operators may rely on state assurance funds to demonstrate financial responsibility.

Enforcement

RCRA contains stringent enforcement provisions. Criminal violations of Subtitle C (hazardous waste) requirements are punishable by fines of as much as \$50,000 for each day of violation and/or imprisonment for as long as five years; knowingly endangering human life brings fines of as much as \$250,000 (\$1 million for a company or organization) and as long as 15 years imprisonment.

In cases not involving criminal conduct, the act authorizes civil and administrative penalties of as much as \$25,000 per day of violation. EPA is authorized both to issue administrative compliance orders and to seek injunctive relief through the courts. Similar civil and administrative penalties (but not criminal penalties) apply to violations of the underground storage tank requirements in Subtitle I. Failure to close or upgrade open dumps can also be enforced by EPA in limited circumstances.

Like most environmental programs, RCRA in practice is largely enforced by state agencies exercising state authority equivalent to the federal. EPA retains the power to undertake enforcement in such "authorized" states, however: the act requires only that the Administrator give notice to the state in which a violation has occurred prior to issuing an order or commencing a civil action.

RCRA also provides for citizen suits both against persons and entities alleged to have violated standards or permit requirements and against EPA in cases where the Administrator has failed to perform an action that is nondiscretionary under the act.

Amendments to RCRA

RCRA has been amended nine times, some of which were noncontroversial additions clarifying portions of the law or correcting clerical errors in the text. The most significant sets of amendments occurred in 1980, 1984, and 1992.

1980 Amendments. The Solid Waste Disposal Act Amendments of 1980 provided EPA tougher enforcement powers to deal with illegal dumpers of hazardous waste; the agency's authority to regulate certain high-volume, low-hazard wastes (known as "special wastes") was restricted; funds were authorized to conduct an inventory of hazardous waste sites; and RCRA authorizations for appropriations were extended through FY1982. Amending language contained in Superfund, P.L. 96-510, established an Assistant Administrator for Solid Waste and Emergency Response at EPA.

Hazardous and Solid Waste Amendments of 1984. The most significant set of amendments to RCRA was the Hazardous and Solid Waste Amendments of 1984 (HSWA), a complex law with many detailed technical requirements. In addition to restrictions on land disposal, and the inclusion of small-quantity hazardous waste generators (those producing between 100 and 1,000 kg of waste per month) in the hazardous waste regulatory scheme that was summarized above, HSWA created the new regulatory program for underground storage tanks (also described above). EPA was directed to issue regulations governing those who produce, distribute, and use fuels produced from hazardous waste, including used oil. Under HSWA, hazardous waste facilities owned or operated by federal, state, or local government agencies must be inspected annually, and privately owned facilities must be inspected at least every two years. Each federal agency was required to submit to EPA an inventory of hazardous waste facilities it ever owned.

The 1984 law also imposed on EPA a timetable for issuing or denying permits for treatment, storage, and disposal facilities: required permits to be for fixed terms not exceeding 10 years; terminated in 1985 the "interim status" of land disposal facilities that existed prior to RCRA's enactment, unless they met certain requirements; required permit applications to be accompanied by information regarding the potential for public exposure to hazardous substances in connection with the facility; and authorized EPA to issue experimental permits for facilities demonstrating new technologies. EPA's enforcement powers were increased, the list of prohibited actions constituting crimes was expanded, penalties were increased, and the citizen suit provisions were expanded. Other provisions prohibited the export of hazardous waste unless the government of the receiving country formally consented to accept it; created an ombudsman's office in EPA to deal with RCRA-associated complaints, grievances, and requests for information; and reauthorized RCRA through FY88 at a level of about \$250 million per year. Finally, HSWA called for a National Ground Water Commission to assess and report to Congress in two years on groundwater issues and contamination from hazardous wastes. The commission was never funded and never established, however.

Federal Facility Compliance Act. The third major set of amendments was the Federal Facility Compliance Act of 1992. This act resolves the legal question of whether federal facilities are subject to enforcement actions under RCRA, by unequivocally waiving the government's sovereign immunity from prosecution. As a result, states, EPA, and the Department of Justice can enforce the provisions of RCRA against federal facilities, and federal departments and agencies can be subjected to injunctions, administrative orders, and/or penalties for noncompliance. Furthermore, federal employees may be subject to criminal sanctions, including both fines and imprisonment under any federal or state solid or hazardous waste law. The act also contains special provisions applicable to mixtures of radioactive and hazardous waste at Department of Energy facilities and to munitions, military ships, and military sewage treatment facilities handling hazardous wastes.

1996 Amendments. The 104th Congress passed an additional set of amendments to RCRA, the Land Disposal Program Flexibility Act (P.L. 104-119). This act exempts hazardous waste from RCRA regulation if it is treated to a point where it no longer exhibits the characteristic that made it hazardous, and is subsequently disposed in a facility regulated under the Clean Water Act or in a Class I deep injection well regulated under the Safe Drinking Water Act. A second provision of the bill exempted small landfills located in arid or remote areas from ground water monitoring requirements, provided there is no evidence of ground water contamination.

Other Recent Laws Affecting Solid Waste Management

Although not technically amending RCRA, the 101st, 103rd, and 104th Congresses have enacted five other solid/hazardous waste-related measures

Sanitary Food Transportation Act. The Sanitary Food Transportation Act of 1990 (P.L. 101-500) required the regulation of trucks and rail cars that haul both food and solid waste (a problem commonly referred to as "backhauling of garbage"). The act directed the Departments of Agriculture, Health and Human Services, and Transportation to promulgate regulations specifying (1) record keeping and identification requirements, (2) decontamination procedures for refrigerated trucks and rail cars; and (3) materials for construction of tank trucks, cargo tanks, and ancillary equipment.

Clean Air Act. The Clean Air Act Amendments of 1990 (P.L. 101-549) contained a provision mandating stronger federal standards for solid waste incinerators. The law requires EPA to issue new source performance standards to control air emissions from municipal, hospital, and other commercial and industrial incinerators. New facilities must comply with the EPA rules within six months of the time they are issued, and existing units must comply within five years of issuance. Pollution Prevention Act. The Pollution Prevention Act of 1990 (Sections 6601-6610 of P.L. 101-508) was passed as part of the Omnibus Budget Reconciliation Act of 1990. The measure declared pollution prevention to be the national policy, and directed EPA to undertake a series of activities aimed at preventing the generation of pollutants, rather than controlling pollutants after they are created. Matching grants were authorized for states to establish technical assistance programs for businesses, and EPA was directed to establish a Source Reduction Clearinghouse to disseminate information. The act also imposed new reporting requirements on industry. Firms that were required to file an annual toxic chemical release form under the Emergency Planning and Community Right-to-Know Act of 1986 must also file a report detailing their source reduction and recycling efforts over the previous year. A more complete description of the act, which addresses air and water pollution as well as waste, is provided in the first section of this report.

Indian Lands Open Dump Cleanup Act. The Indian Lands Open Dump Cleanup Act of 1994 (P.L. 103-399) required the Indian Health Service (IHS) to provide technical and financial support to inventory and close open dumps on Indian lands, and to maintain the sites after closure. According to IHS, only two of more than 600 waste dumps on Indian lands met current EPA regulations prior to the law's enactment.

Mercury-Containing and Rechargeable Battery Management Act. The 104th Congress passed legislation (P.L. 104-142) exempting battery collection and recycling programs from certain hazardous waste management requirements, prohibiting the use of mercury in batteries, and requiring labels on batteries to

encourage proper disposal and recycling. By exempting battery collection and management programs from some parts of RCRA, the law was expected to stimulate new recycling programs

Further reading

- Shimberg, Steven J. The Hazardous and Solid Waste Amendments of 1984: What Congress Did ... and Why. *The Environmental Forum*. March 1985. pp. 8-19.
- Environmental Protection Agency. Office of Solid Waste. *RCRA Orientation Manual*. September 2002. 259 p.

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