

CHAPTER 2

SUPERFUND: THE HAZARDOUS WASTE CLEANUP PROGRAM

In this chapter...

Overview	VI-9
Definitions	VI-10
History and Purpose of CERCLA	VI-10
Trigger for Statutory Response	VI-11
Types of Response Actions	VI-11
RCRA and Remedy Selection Under CERCLA	VI-12
RCRA Corrective Action vs. CERCLA Response	VI-13
Imminent Hazards Under RCRA and CERCLA	VI-13
Summary	VI-14
Additional Resources	VI-14

OVERVIEW

This chapter focuses on the **Comprehensive Environmental Response, Compensation, and Liability Act**, which is a central part of the legislative framework for environmental protection. CERCLA is also known as **Superfund**.

CERCLA is designed to remedy the mistakes in hazardous waste management made in the past, while the RCRA waste management standards are concerned with avoiding such mistakes through proper management in the present and future. RCRA mainly regulates how wastes should be managed to avoid potential threats to human health

and the environment. CERCLA, on the other hand, is relevant primarily when mismanagement occurs or has occurred (i.e., when there has been a release or a substantial threat of a release in the environment of a hazardous substance, or of a pollutant or contaminant, that presents an imminent and substantial threat to human health). More specifically, RCRA authorizes a general regulatory program to manage all hazardous wastes from cradle to grave (i.e., from generation to ultimate disposal), while CERCLA authorizes a number of government actions to remedy the conditions that could result in a release or the effects of a release itself. While the two programs use parallel, but not identical, procedures, both RCRA and CERCLA authorize EPA to act in the event of an imminent hazard.

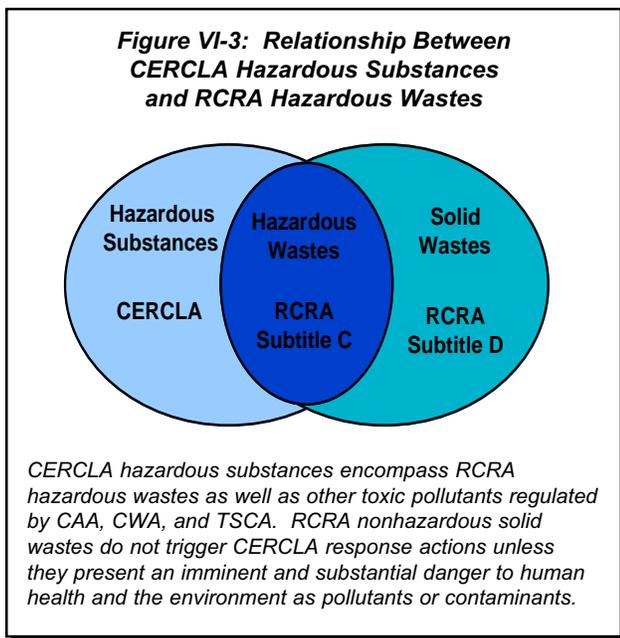
This chapter discusses why CERCLA was enacted, summarizes some of the Statute's authorities, and examines the major areas where the CERCLA and RCRA programs interact.

RCRA VS. CERCLA

RCRA mainly regulates how wastes should be managed to avoid potential threats to human health and the environment. CERCLA, on the other hand, comes into play primarily when mismanagement occurs or has occurred (i.e., when there has been a release or a substantial threat of a release in the environment of a hazardous substance or of a pollutant or contaminant that presents an imminent and substantial threat to human health).

DEFINITIONS

RCRA and CERCLA both address hazards to the environment. However, CERCLA is the more comprehensive statute. CERCLA hazardous substances encompass RCRA hazardous wastes, as well as other toxic pollutants regulated by CAA, CWA, and TSCA. Thus, all RCRA hazardous wastes may trigger CERCLA response actions when released into the environment. RCRA nonhazardous solid wastes, on the other hand, do not trigger CERCLA response actions unless they present an imminent and substantial danger as pollutants or contaminants (see Figure VI-3).



In addition to hazardous substances, CERCLA addresses **pollutants and contaminants**, which are broadly defined to include any substance that is reasonably anticipated to cause illness or deformation in any organism. All three definitions specifically exclude petroleum and natural gas.

HISTORY AND PURPOSE OF CERCLA

CERCLA was established in response to the discovery, in the late 1970s, of a large number of abandoned, leaking, hazardous waste dumps that

were threatening human health and contaminating the environment. One of the best known dumps was Love Canal in Niagara Falls, New York, where a chemical company had buried large amounts of hazardous waste in a canal originally designed to transport water. After the canal was capped with clay and soil, an elementary school was built over the site, and the city of Niagara Falls grew rapidly around it.

In the 1970s, an unusual number of community residents (especially those who attended the elementary school) developed serious health problems. Moreover, the residents complained of noxious fumes and of chemicals oozing out of the ground. Subsequent government investigations found extensive contamination of the area, including ground water supplies. In 1978, President Carter declared Love Canal a federal disaster area, and most of the residents in the area around the site were relocated.

At the time, declaring the site a federal disaster area was the only viable option available to the federal government. RCRA did not provide relief because the problem did not involve the current or future management of wastes. Legal actions against the responsible parties did not offer a solution because such action was too time consuming and costly. Unfortunately, subsequent investigations indicated that the scope of the waste dump problem went far beyond Love Canal, making the federal disaster relief option impractical. In late 1980, Congress passed CERCLA to address other uncontrollable hazardous waste sites similar to Love Canal throughout the country.

CERCLA, as originally enacted in 1980, authorized a five-year program by the federal government to perform the following primary tasks:

- Identify those sites where releases of hazardous substances had already occurred or might occur and posed a serious threat to human health, welfare, or the environment
- Take appropriate action to remedy those releases
- Force those parties responsible for the release to pay for the cleanup actions.

SUPERFUND REAUTHORIZATION AND TAXING AUTHORITY

SARA not only extended CERCLA for another five years, but increased the Fund from \$1.6 billion to \$8.5 billion. The taxing authority of SARA was to expire on December 31, 1991; however, the Omnibus Reconciliation Act of 1990 extended the taxes without modification for four years, through December 31, 1995. Separately, the Superfund program was reauthorized, without changes to the text of the Statute, until September 30, 1994, a three-year extension from the expiration date of the SARA authorization in 1991. Congress failed to reauthorize the Superfund program before September 30, 1994 (the end of the fiscal year), however, the program is still operating because funding continues to be appropriated to the Superfund program. In the future, the Superfund program may be reauthorized and the taxing authority may be extended.

To accomplish these tasks, CERCLA gave new cleanup authority to the federal government, created a \$1.6 billion trust fund to pay for government cleanup, and imposed cleanup liability on those responsible. This “Super Fund” consisted primarily of tax assessments on oil and designated chemicals.

During the five-year period of the original CERCLA program, two facts became increasingly clear: the problem of abandoned hazardous waste sites was more extensive than originally thought, and its solution would be more complex and time consuming. Unlike RCRA response actions where the owner and operator of a site are known, CERCLA may deal with environmental threats due to activities conducted long ago, thus the responsible party may be unknown, no longer in existence (e.g., a defunct company), or unable to pay. To address these additional concerns, SARA not only extended CERCLA for another five years, but increased the fund from a total of \$1.6 billion to \$8.5 billion. SARA also established new standards and schedules for site cleanup and also created new programs for informing the public of risks from hazardous substances in their community and preparing communities for hazardous substance emergencies.

TRIGGER FOR STATUTORY RESPONSE

CERCLA response authorities are triggered by a release or a substantial threat of release of dangerous substances into the environment (e.g., a chemical spill from a tank truck accident or a leak from a damaged drum). The release must involve either:

- A hazardous substance, as defined in the Statute

OR

- A pollutant or contaminant that may present an imminent or substantial danger to public health or welfare.

TYPES OF RESPONSE ACTIONS

Once a potential release has been discovered, the information is entered into the **Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)**, a computerized database used to track hazardous substance sites. After being entered into CERCLIS, each site undergoes a **preliminary assessment (PA)** to determine if the site poses a potential hazard and whether further action is necessary. If the threat is immediate, a **removal action** may be conducted.

Removal actions are short-term cleanup actions that usually address problems only at the surface of a site. They are conducted in response to an emergency situation (e.g., to avert an explosion, to cleanup a hazardous waste spill, or to stabilize a site until a permanent remedy can be found). Removal actions are limited to 12 months duration or \$2 million in expenditures, although in certain cases these limits may be extended. Removals may occur at any point in time after the PA has been conducted.

Remedial actions are longer-term response actions that ultimately represent the final remedy for a site and generally are more expensive and of a longer duration than removals. This is because the remedial actions are intended to provide permanent

solutions to hazardous substance threats. It is possible that both removal and remedial actions may be taken at the same site. In the event that longer-term cleanup is necessary, the site is referred to the remedial program for further investigation and assessment.

If the PA reveals a contamination problem exists, but does not pose an immediate threat that warrants a removal, EPA will continue to study the site during a **site inspection (SI)**. Based on data collected during the PA and the SI, EPA will evaluate the site using the **Hazard Ranking System (HRS)**, a model and scoring system that determines the relative risk to public health and the environment posed by hazardous substances in ground water, surface water, air, and soil. Only those sites with a score of 28.5 (on a scale from 0 to 100) are eligible for placement on the **National Priorities List**, EPA's priority hazardous substance sites for cleanup. EPA only funds remedial actions at hazardous waste sites on the NPL. As of May 2002, there are over 1,200 sites either on the NPL or proposed for inclusion. The majority of sites are placed on the NPL based on their HRS score. Under some circumstances, sites may also be placed on the NPL by the state in which the site is located or by the Agency for Toxic Substances and Disease Registry (ATSDR).

Once a site is placed on the NPL, the remedial process begins. The remedial process requires EPA to design a community involvement plan that will inform citizens of all remedial activities and provide opportunities for public comment. A remedial response has two main phases. The first phase, the **remedial investigation/feasibility study (RI/FS)**, involves evaluating site conditions at the site, defining any problems, and comparing alternative site cleanup methods. After the remedy has been selected, the decision is documented in the **record of decision (ROD)**. The second phase, the **remedial design/remedial action (RD/RA)**, involves designing the chosen cleanup and beginning construction.

Following the implementation of the remedy, the state or the **potentially responsible party (PRP)** assumes responsibility for the **operation and maintenance (O&M)** of the site, which may include such activities as ground water pump and treat, and

cap maintenance. Once EPA has determined that all appropriate response actions have been taken and cleanup goals have been achieved, the site is deleted from the NPL through a formal rulemaking process.

RCRA AND REMEDY SELECTION UNDER CERCLA

CERCLA assures that remedies are based on the cleanup standards and criteria that have been established by other laws, such as CAA, CWA, and RCRA. CERCLA specifically requires that on-site remedies attain any legally **applicable or relevant and appropriate requirements (ARARs)**, standards, criteria, or limitations under federal or more stringent state environmental laws, including RCRA, unless site-specific waivers are obtained. This means, for example, that whenever a remedial action involves on-site treatment, storage, or disposal of hazardous waste, the action must meet RCRA's technical standards for such treatment, storage, or disposal (as discussed in Section III, Chapter 5). The **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**, which is the regulatory blueprint for the CERCLA program, addresses the application of ARARs to CERCLA remedial actions (40 CFR Part 300).

Once hazardous wastes are transported from a CERCLA site, they are subject to full RCRA regulation. Therefore, all transportation and TSD requirements under RCRA must be followed. This means that off-site shipments must be accompanied by a manifest. In particular, the off-site disposal of hazardous wastes can occur only at a RCRA facility in a unit in full compliance with the Subtitle C requirements. Agency policy requires that the

WHAT ARE ARARS?

CERCLA on-site remedies must attain any ARARs standards, criteria, or limitations under federal or more stringent state environmental laws, including RCRA, unless site-specific waivers are obtained. This means, for example, that whenever a remedial action involves on-site treatment, storage, or disposal of hazardous waste, the action must meet RCRA's technical standards for such treatment, storage, or disposal. The NCP details the application of ARARs to Superfund remedial actions.

disposal facility be inspected by EPA six months prior to receiving the waste.

For off-site land disposal of wastes resulting from a CERCLA activity, the program contains two additional requirements. First, the unit in which the wastes are to be disposed must not be releasing hazardous wastes or constituents into ground water, surface water, or soil. Second, any releases from other units of the facility must be under an approved RCRA corrective action program. This policy assures that wastes shipped off site from CERCLA sites are sent to environmentally sound waste management facilities.

Finally, EPA may not take or fund remedial actions in a state unless the state ensures the availability of hazardous waste treatment and disposal capacity by submitting a **capacity assurance plan (CAP)** to EPA. This capacity must be for facilities that are in compliance with RCRA Subtitle C requirements, and must be adequate to manage hazardous wastes projected to be generated within the state over 20 years. This requirement limits and manages the amount of hazardous waste generated in the United States by encouraging waste minimization and recycling, interstate agreements, and efficient and realistic hazardous waste management systems. Currently, every state in the nation had submitted a CAP to EPA.

RCRA CORRECTIVE ACTION VS. CERCLA RESPONSE

The cleanup of a site with hazardous waste contamination may be handled under either CERCLA, as described above, or RCRA. RCRA authorizes EPA to require corrective action (under an enforcement order or as part of a permit) whenever there is, or has been, a release of hazardous waste or constituents at TSDFs. The RCRA statute also provides similar corrective action authority in response to releases at interim status facilities. Further, RCRA allows EPA to require corrective action beyond the facility boundary. EPA interprets the term corrective action (as discussed in Section III, Chapter 9) to cover the full range of possible actions, from studies and interim measures to full cleanups. Anyone who violates a corrective

action order can be fined up to \$27,500 per day of noncompliance and runs the risk of having their permit or interim status suspended or revoked.

RCRA and CERCLA cleanup programs follow roughly the same approach to cleanups. In both, examinations of available data are made after discovery of a release to determine if an emergency action is warranted. Both programs authorize short-term measures to abate immediate adverse effects of a release. Once an emergency has been addressed, both programs provide for appropriate investigation and more investigation as needed to establish long-term cleanup options. One major difference between the two programs involves funding. CERCLA requires that site conditions be analyzed according to HRS and that only NPL sites receive any remedial action funding. There is no comparable requirement under the RCRA corrective action program because the owner or operator of the site is responsible for the cost of the cleanup.

The facility owner or operator implements RCRA corrective action. On the other hand, a number of different parties can implement a CERCLA remedial action in a number of different ways. For example, agreements may be reached that allow PRPs, the State, or the Federal government, to assume that the lead for certain portions of a response action.

Generally, cleanups under RCRA corrective action or CERCLA will substantively satisfy the requirements of both programs. It is EPA's general policy for facilities subject to both CERCLA and RCRA to be deferred to RCRA authority. In some cases, however, it may be more appropriate to use both RCRA and CERCLA authorities. EPA has many procedures in place to facilitate coordination between RCRA and CERCLA programs.

IMMINENT HAZARDS UNDER RCRA AND CERCLA

Both RCRA and CERCLA contain provisions that allow EPA to require persons contributing to an imminent hazard to take the necessary actions to clean up releases. RCRA's §7003 imminent and substantial endangerment provision addresses

nonhazardous as well as hazardous solid waste releases. The authority under CERCLA §106 is essentially the same, except that CERCLA's authority to abate an imminent or substantial danger to public health or the environment is limited to hazardous substance releases. In an enforcement action, the RCRA and CERCLA imminent hazard provisions may be used in tandem to ensure adequate protection of human health and the environment.

SUMMARY

CERCLA authorizes cleanup responses whenever there is a release, or a substantial threat of a release, of a hazardous substance, a pollutant, or a contaminant, that presents an imminent and substantial danger to public health. After a potential release has been discovered, the site is entered into CERCLIS, and undergoes a PA. If the hazard is immediate, EPA may require a removal action. If a contamination problem still exists, but is not an immediate threat, EPA will conduct an SI, evaluate the site using the HRS, and possibly place the site on the NPL for remedial action. Such longer-term remedial actions involve additional remediation steps and larger expenditure of time and resources because they provide permanent solutions to hazardous substance problems. These additional steps include an RI/FS. After a remedy has been

selected, the decision is documented in the ROD, the RD/RA is implemented, and the state or PRP is responsible for O & M of the site. When all appropriate remedial actions have been taken and the cleanup goals have been achieved, the site is deleted from the NPL.

The RCRA program differs from the CERCLA waste management approach. The general distinction between the two programs is that RCRA authorizes the safe and protective management of wastes, while CERCLA authorizes cleanup responses whenever there is a release of wastes. However, the two programs do overlap. For example, RCRA standards may be considered ARARs and can be important in selecting remedies under CERCLA. Moreover, RCRA's corrective action and CERCLA's remedial action use parallel, but not identical, procedures. Finally, both Statutes authorize EPA to act in the event of an imminent hazard.

ADDITIONAL RESOURCES

Additional information about the topics covered in this chapter can be found at www.epa.gov/superfund. Further information about EPA cleanup programs can be found at www.epa.gov/epaoswer/osw/cleanup.htm.