



The Superfund Remedial Program

Under the Superfund Remedial Program, the U.S. Environmental Protection Agency (EPA) takes long-term cleanup actions to stop or substantially reduce releases or threats of releases of hazardous substances that are serious but not immediately life-threatening.

How Does EPA Learn About Potential Remedial Sites?

EPA learns about sites for potential remedial action through a variety of sources, including required reporting, routine inspections of facilities that treat, store or dispose of hazardous wastes, visible evidence, and citizen reports. Once a site is identified, EPA or the State reviews any available documents on the site, in what is called a preliminary assessment, to determine if further action is needed. Some sites do not require further action because it is determined they do not threaten human health or the environment.

If a potential problem does exist, EPA or the State conducts a site inspection. Typically, the site inspection involves collecting information about the site -- for example, types of soils on site, streams or rivers on or near the site, number of people in the area, weather conditions, and who owns or operates the site. Samples of wastes, soil, well water, river water, and air are collected to determine what hazardous substances are on the site. Samples also are taken nearby to determine if the substances have traveled, or migrated, away from the site.

Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, in 1980. This law created a tax on the chemical and petroleum industries and provided a broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or welfare or the environment. Over 5 years, \$1.6 billion were collected and the tax went to a Trust Fund for cleaning up abandoned or uncontrolled hazardous waste sites. The U.S. Environmental Protection Agency (EPA) is responsible for running the Superfund program. On October 17,

1986, the Superfund Amendments and Reauthorization Act (SARA) was signed into law. SARA increases the Trust Fund to \$8.5 billion over 5 years and strengthens EPA's authority to conduct cleanup and enforcement activities.

Under the Superfund program, EPA can:

- Pay for the cleanup of hazardous waste sites when those responsible for such sites cannot be found or are unwilling or unable to clean up a site
- Take legal action to force those responsible for hazardous waste sites that threaten public health or the environment to clean up those sites or pay back the Federal

government for the costs of cleanup.

The law authorizes two kinds of response actions.

- Short-term *removals* where actions may be taken to address releases or threats of releases requiring prompt response
 - Longer-term *remedial responses* that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious but not immediately life threatening. They can be conducted only at sites on EPA's National Priorities List (NPL).
- Remedial and removal responses include, but are not limited to

- Destroying, detoxifying or immobilizing the hazardous substances on the site through incineration or other treatment technologies.
- Containing the substances on-site so that they can safely remain there and present no further threat.
- Removing the materials from the site to an EPA-approved, licensed hazardous waste facility for treatment, containment, or destruction.
- Identifying and restoring contaminated ground water, halting further spread of the contaminants, or in some circumstances providing an alternate source of drinking water.

Based on information obtained from the site inspection, EPA uses its Hazard Ranking System (HRS) to calculate a

or if they have the potential to migrate. Sites with high enough scores are considered for EPA's National Priorities List (NPL). Sites on the NPL present the most serious problems among hazardous waste sites nationwide and are eligible for long-term remedial actions through the Superfund program.

What Is the State Role in the Remedial Process?

States play an important role in the remedial process. Some States receive money from EPA for identifying and managing sites through a formal Cooperative Agreement. Further, States are always responsible for the long-term maintenance of a site once the remedial response is finished. The new Superfund law establishes a minimum level of State participation in all phases of CERCLA response actions from preliminary assessment to deletion of sites from the NPL. States also must be notified of Federal negotiations with potentially responsible parties and remedial activity managed by EPA. The National Contingency Plan (NCP), the Federal regulation that guides the Superfund program, is being revised to reflect these new State involvement requirements.

What Happens During a Remedial Response Action?

A remedial response has two main phases, a Remedial Investigation/Feasibility Study (RI/FS), and a Remedial Design/Remedial Action (RD/RA). During the RI/FS conditions at the site are studied, the problem(s), if any, are defined and alternate methods to clean up the site are evaluated. A typical RI/FS takes approximately 25 months to complete.

In the remedial design and remedial action phases, the recommended cleanup is designed and construction undertaken. The design phase takes approximately 9 months to complete. The time required to complete the remedy varies according to the complexity of the site.

During a remedial investigation, EPA or the State collects and analyzes information to determine the type and extent of contamination at the site. Aerial photographs may be taken of the site and surrounding area to map the physical features of the land, including rock formations and sources of water. A variety of techniques are used to locate contaminated ground water and buried drums or tanks that might contain hazardous substances.

Samples are taken from soils, drums, lagoons, rivers, ground water, and air, then analyzed by EPA-approved laboratories to determine if hazardous substances might be present and, if so, the type and amount. EPA or the State reviews and interprets results of the laboratory analysis.

Once the extent of contamination is known, the feasibility study can begin. During the feasibility study, specific alternate remedies are considered and evaluated by EPA and the public. The options EPA may consider are:

- Removing hazardous substances from the site to an EPA approved, licensed hazardous waste facility for treatment, containment, or destruction,
- Destroying or treating the waste on-site through incineration or other treatment technologies,
- Containing the waste onsite so that it can safely remain there and present no further problem, and
- Identifying and removing the source of ground-water contamination, and halting further spread of the contaminants.

In rare circumstances, the recommended remedy may involve relocating residents to prevent further exposure. Design and construction activities are conducted under the supervision of EPA and the U.S. Army Corps of Engineers, or the State can manage all site activities on its own.

How Is the Best Cleanup Alternative Chosen?

EPA must take into account certain factors specified in the NCP for evaluating remedial action alternatives at hazardous waste sites. In addition to protecting human health and the environment, the remedy chosen must:

- Be technically feasible, considering the location and conditions at the site,
- Be cost-effective, and
- Use permanent solutions and alternative treatment technologies or resource recovery technologies as much as possible.

Can EPA Make Those Responsible Pay?

EPA always makes a thorough effort to identify and locate those responsible for causing contamination problems at the site ("potentially responsible parties"). To save Superfund monies for those cases where no responsible party can be identified, EPA will take legal action to make those identified as responsible pay for the costs of cleanup actions. Although EPA is willing to negotiate with private parties and encourages voluntary cleanup, it has the authority under the Superfund law to legally force those responsible to take specified cleanup actions. All work performed by responsible parties is closely guided and supervised by EPA and must meet the same standards required for actions financed through Superfund.

Can Local Citizens Get Involved in Superfund Cleanups?

To ensure that the local public is involved in Superfund actions, EPA conducts community relations activities. These efforts are designed to inform local officials and residents about conditions and developments at Superfund sites and to make sure that the concerns of the community are communicated to EPA and State officials. EPA or the State also prepares a community relations plan that is tailored to the needs of the community near the site. A community relations plan is prepared for all remedial sites and for all removal sites where activities last longer than 45 days. The plan describes the activities that will be conducted to encourage citizen input and inform the community of progress at the site. Community relations activities may include holding periodic informal meetings of small groups of interested citizens and government staff, or larger public forums that include a presentation about activities at the site and a question and answer period. Information also can be provided through technical summaries and the distribution of fact sheets such as these. In addition to the community relations plan, EPA must conduct several other public involvement activities for remedial actions. The completed feasibility study report with a preferred remedial alternative must be available for public comment for at least 21 days. During the public comment period, EPA may hold a public meeting to discuss the range of alternatives that were analyzed, and the rationale for recommending a particular alternative. EPA then prepares a Responsiveness Summary describing significant community comments on the proposed remedial action and the alternatives considered. The public involvement process will be repeated if EPA decides that a new alternative that is significantly different from the original alternative is most appropriate for the site.