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Corrective Action (Cleanup Process Timeline)

In 1984, Congress passed the Hazardous and Solid Waste Amendments, which granted EPA expanded authority to require corrective action at permitted and non-permitted treatment, storage, and disposal facilities. Corrective action requires that hazardous waste facilities must investigate and clean up hazardous releases into soil, groundwater, surface water, and air. These facilities include current and former chemical manufacturing plants, oil refineries, lead smelters, wood preservers, steel mills, commercial landfills, federal facilities, and a variety of other entities. Corrective action is principally implemented through RCRA permits and orders.

EPA policy is for the public to have an opportunity to review and comment on all proposals to complete corrective action. Here is some background on the corrective action program.

Required activity?

Yes. Regulations under 40 CFR § 124 and 40 CFR § 270 outline the required public participation activities for corrective action.

EPA's public participation guidelines for the RCRA corrective action program are detailed in Chapter 4 of the 2016 Edition of the RCRA Public Participation Manual.

How are facilities identified for corrective action?

Facilities are generally brought into the RCRA Corrective Action process when there is an identified release of hazardous waste or hazardous constituents, or when EPA is considering a treatment, storage, and disposal facility (TSDF) RCRA permit application. At the federal level, corrective actions may take place under a RCRA permit or as an enforcement order under § 3008 of RCRA. Where RCRA permits are modified to incorporate corrective actions, these changes must follow the permit modification procedures in 40 CFR § 270.41 or 270.42. In authorized states, corrective action may take place under a state-issued RCRA permit, a state cleanup order, a state voluntary cleanup program, or another state cleanup authority.

Steps in the corrective action process

The RCRA corrective action cleanup process focuses on results rather than specific steps, and is flexible, depending on site-specific conditions. Because no one approach is likely to be appropriate for all corrective action facilities, the following elements should not be viewed as prescribed steps in the corrective action process. Instead, they serve as evaluations necessary to make good cleanup decisions within a flexible program.

1. **Initial Site Assessment/RCRA Facility Assessment (RFA).** The corrective action process usually begins with an initial site assessment, or RFA, under EPA approval. An RFA gathers data about a site, including data on releases and potential releases of hazardous waste and hazardous constituents, to determine whether a cleanup may be necessary. RFAs usually include a file review of available facility information; a visual site inspection to confirm available information on solid waste management units (SWMUs) at the facility and to note any visual evidence of releases; and in some cases, a sampling visit to confirm or disprove suspected releases. The RFA report usually serves as the basis for future corrective actions at a facility. If, after completion of the RFA, it appears likely that a release exists, the overseeing agency will develop facility-specific corrective action requirements in a schedule of compliance, which will be included in the facility's permit or in a RCRA § 3008(h) corrective action order. EPA issued the Initial Site Assessment guidance to assist in this process.

2. **Site Characterization/RCRA Facility Investigation (RFI).** An RFI is necessary when a release or potential release has been identified, but additional information is required to determine the nature and scope of possible corrective actions. The purpose of an RFI is to characterize the nature and extent of contamination at the facility and to support selection and implementation of a remedy or, if necessary, interim measures. EPA issued Site Characterization documents to assist in this process.
3. **Interim Measures.** Interim measures are actions and activities used to control or abate ongoing risks to human health or the environment at a facility in advance of final remedy selection. Interim measures may be necessary in situations where contamination poses an immediate threat to human health or the environment. They also may be necessary to prevent further environmental degradation or contaminant migration prior to implementing the final remedy. Interim measures may occur at any point in the corrective action process; however, they are often implemented during the RFI or Corrective Measures Study (CMS). Recently, EPA has increasingly emphasized the importance of interim measures and site stabilization in the corrective action program. EPA issued Interim Actions documents to assist in this process.
4. **Evaluation of Remedial Alternatives/Corrective Measures Study (CMS).** When the need for corrective measures is verified, the facility may be required to perform a CMS to identify and evaluate potential remedial alternatives. When EPA uses performance standards or a similar approach, or the preferred remedial alternative is obvious (e.g., when EPA has issued a presumptive remedy that is appropriate to site-specific conditions), it may not be necessary to submit a formal CMS. EPA issued Evaluation of Remedial Alternatives documents to assist in this process.
5. **Remedy Selection.** Following receipt of a recommendation for a preferred remedy from the facility owner/operator, the overseeing agency reviews the preferred remedy and other remedial alternatives and decides to tentatively approve the preferred remedy, tentatively select a different remedy, or require additional analysis of remedial alternatives. The tentatively selected remedy will then undergo public review and comment, usually in the form of a proposed modification to the facility's permit or corrective action order. Following public review, EPA responds to public comments and then modifies the facility permit or corrective action order to incorporate the remedy.
6. **Remedy Implementation/Corrective Measures Implementation (CMI).** Once the overseeing agency modifies the permit or corrective action order to include the selected remedy, the facility must begin to implement the remedy. Remedy implementation typically involves detailed remedy design, remedy construction, and remedy operation and maintenance, called a Corrective Measures Implementation (CMI). A CMI is conducted in accordance with a CMI plan that has been approved by the overseeing agency. EPA issued Remedy Implementation documents to assist in this process.
7. **Completion of the Remedy.** Once corrective measures are complete, the overseeing agency will either terminate the corrective action order or modify the permit to remove the corrective action schedule of compliance. Decisions regarding completion of corrective measures can be made for an entire facility, for a portion of a facility, or for a specified unit or release.

One more element of corrective action to keep in mind is:

- **Long-Term Care.** The Corrective Action Program strives to ensure long-term protection after a facility cleanup has established institutional and engineering controls. This protects the integrity of the remedy by preventing or limiting exposure to remaining hazardous waste at the facility. EPA defines institutional controls as "non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and protect the integrity of the remedy." Such controls provide information and/or restrictions that help modify or guide human behavior at facilities and properties where hazardous wastes and contamination prevent unlimited use and unrestricted exposure. Common examples of institutional controls include permits and orders, zoning, building or excavation permits, well drilling prohibitions, and easements and restrictive covenants. EPA developed Long-Term Care documents for identifying and selecting institutional controls at corrective action cleanups.