



Conditional Remedies Under RCRA Corrective Action

BACKGROUND: On October 7, 1999, EPA announced its decision to withdraw most of the provisions of the July 27, 1990, Notice of Proposed Rulemaking (NPRM) for corrective action for solid waste management units (SWMUs) at hazardous waste management facilities (64 FR 54604). Commonly known as the Subpart S proposed rule, this rule would have created a comprehensive set of requirements under 40 CFR Part 264, Subpart S of the Resource Conservation and Recovery Act (RCRA) regulations, for conducting corrective action at RCRA facilities. To implement RCRA corrective action, EPA is deferring instead to: 1) its February 16, 1993, final rule on Corrective Action Management Units (CAMUs) and Temporary Units (TUs) (58 FR 8658), and the January 22, 2002, CAMU Amendments (67 FR 2962); 2) its May 1, 1996, Advance Notice of Proposed Rulemaking (ANPRM) on RCRA corrective action (61 FR 19432); 3) its November 30, 1998, final rule on Hazardous Remediation Waste Management Requirements (HWIR-Media) (63 FR 65874); and 4) various policy and guidance documents that the Agency has issued since the 1990 Subpart S proposal. In addition, EPA may issue one or more final rules pertaining to targeted jurisdictional issues, such as the definition of the term "facility" for purposes of RCRA corrective action, and supplemental guidance documents in a number of areas pertaining to RCRA corrective action.

The RCRA corrective action program was mandated by the Hazardous and Solid Waste Amendments of 1984 (HSWA). Congress directed EPA to require "corrective action for all releases of hazardous waste or constituents from any solid waste management unit..." [HSWA 3004(u)] and, where necessary, "that corrective action be taken beyond the facility property boundary..." [HSWA3004(v)]. One of the most important elements of RCRA corrective action is the evaluation, selection and implementation of remedies (i.e., corrective actions) at RCRA facilities. There are a number of different types of remedies that may be established pursuant to RCRA corrective action. The purpose of this Information Brief is to provide information on conditional remedies. This Information Brief is one of a series on RCRA corrective action. It has been revised from a previous Information Brief (EH-413-064/0696, June 1996).

STATUTES: RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA).

REGULATIONS: Proposed 40 CFR Part 264, Subpart S ["Corrective Action for Solid Waste Management Units (SWMUs) at Hazardous Waste Management Facilities", 55 FR 30798, July 27, 1990], withdrawn on October 7, 1999 (64 FR 54604); "Corrective Action Management Units and Temporary Units: Corrective Action Provisions Under Subtitle C" (58 FR 8658, February 16, 1993); Advanced Notice of Proposed Rulemaking (ANPRM) "Corrective Action for Releases from Solid Waste Management Units at Hazardous Waste Management Facilities" (61 FR 19432, May 1, 1996); "Hazardous Remediation Waste Management Requirements" (HWIR-Media) (63 FR 65874, November 30, 1998); "Land Disposal Restrictions Phase IV Final Rule" (63 FR 28556, May 26, 1998); "Amendments to the Corrective Action Management Unit Rule" (67 FR 2962; January 22, 2002).

REFERENCES:

1. "Managing the RCRA Corrective Action Program for Environmental Results: The RCRA Facility Stabilization Initiative," EPA Office of Solid Waste Memorandum to EPA Regional RCRA Waste Management Directors, October 25, 1991
2. "[RCRA Corrective Action Program Guide \(Interim\)](#)," U.S. Department of Energy, Office of Environmental Policy and Assistance, RCRA/CERCLA Division (EH-413), Guidance Manual, DOE/EH-0323, May 1993.
3. "[Corrective Action Management Units and Temporary Units](#)," U.S. Department of Energy, Office of Environmental Policy and Guidance, RCRA/CERCLA Division (EH-413), RCRA Information Brief, EH-413-043r, January 2000.
4. "[Amendments to the Corrective Action Management Unit Rule; Final Rule \(67 FR 2962\)](#)," U.S. Department of Energy (DOE), Office of Environmental Policy and Guidance, RCRA/CERCLA Division (EH-413), Regulatory Bulletin, July 2002.

What is a conditional remedy?

Conditional remedies were first proposed as part of EPA's Subpart S proposed rule (55 FR 30803, July 27, 1990), which, as indicated above, has been withdrawn (64 FR 54604, October 7, 1999). EPA developed the concept of conditional remedies to

provide remedial options that can be utilized when prompt remedial action will reduce risks to acceptable levels, or where final cleanup is impracticable. A conditional remedy is a type of corrective action in which short-term action is used to control risk and contamination is allowed to remain, until definitive (final) remedies, if appropriate,

can be phased in over time. A conditional remedy would be especially appropriate where prompt remedial action can reduce risk to levels acceptable for current land uses and where final cleanup is technically impracticable. Conditional remedies would enable the regulated community to focus resources on the most pressing environmental problems at a facility.

Is the conditional remedy concept still valid?

The 1996 ANPR and recent EPA guidance or policy documents do not talk specifically of conditional remedies. The concept is still valid, however. But instead of using the term conditional remedies, EPA is deferring to its Stabilization Initiative (EPA, OSW Director Memorandum to Regional Administrators, "Managing the Corrective Action Program for Environmental Results: The RCRA Stabilization Effort", October 25, 1991). In accordance with the stabilization initiative, near-term activities may be used at individual SWMUs to control or abate threats to human health and the environment and prevent or minimize further contaminant migration, rather than focusing on long-term final solutions. For example, it will often be reasonable to initiate prompt cleanup to levels consistent with current use, but final or more complete cleanup can be deferred.

Stabilization and conditional remedies are therefore essentially equivalent concepts. While EPA is no longer using the term conditional remedies, some states may be using the term conditional remedies to describe stabilization actions.

What are the criteria that a conditional remedy should meet?

A conditional remedy should meet a number of conditions:

- protect human health and the environment;
- achieve media cleanup standards for hazardous waste releases beyond the facility boundary as soon as practicable;
- prevent further significant environmental degradation through treatment or engineered measures to control the source of any hazardous waste releases, and prevent further migration of such releases within the facility boundary;
- institute effective institutional or other controls (e.g., fences and engineered structures) to prevent any significant exposures to hazardous wastes at the facility;
- continue monitoring of hazardous constituent releases to determine whether further significant environmental degradation is occurring; and
- comply with standards for the management of wastes.

Are conditional remedies appropriate for DOE facilities?

Conditional remedies can play a significant role in the implementation of corrective action at large complex federal facilities such as those operated by DOE. Utilization of conditional remedies will enable federal facilities to make more effective use of resources by focusing on the most pressing problems first. A conditional remedy would be most appropriate in those instances where the contaminant sources and releases:

- are of minimal current threat to human health or the environment;
- can be easily controlled in the short term to reduce risk or further contaminant migration;
- are relatively remote from potential receptors;
- can be reliably controlled to prevent further environmental degradation; or
- where the facility owner/operator can reasonably be expected to maintain a long-term presence.

When are conditional remedies not appropriate?

Conditional remedies would not be appropriate in situations where there is lack of reasonable assurance that further environmental degradation will not occur during or following remedial activities. For example, a conditional remedy would not be appropriate at a location with ground water contamination in close proximity to an environmentally sensitive area (e.g., a wetland). Furthermore, a conditional remedy would not be appropriate in the case of a fast-moving plume, or in circumstances where the hydrogeology of the area suggests that additional migration of contaminants will likely occur despite the implementation of engineered systems or devices to control the migration of releases of hazardous wastes or constituents.

What cleanup standards might apply to conditional remedies?

Media cleanup standards are concentration levels of hazardous constituents in ground water, surface water, air, or soils that a remedy should achieve. In most cases, media cleanup levels would be established for each medium during the remedy selection process. The same cleanup standards established for final remedies could be applied to conditional remedies as well. However, since conditional remedies would in most cases entail short-term actions to reduce risks, reduced (less stringent) media cleanup standards could be applied. As with all conditional remedies, however, final cleanup and a determination of no further action may be contingent on the need for additional action.

Media cleanup standards will be set for each contaminated medium as part of the remedy selection process. For example, contaminated ground water may require cleanup to established maximum contaminant levels

(MCLs). Like the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), RCRA corrective action uses 10^{-4} to 10^{-6} lifetime excess cancer risk range based on site-specific factors to determine appropriate cleanup levels for carcinogens. Cases where it is necessary to protect ecological receptors will also influence the establishment of cleanup levels. For non-carcinogens (i.e., systemic toxicants) cleanup levels will represent concentration levels to which human populations, including sensitive subgroups, could be exposed on a daily basis without appreciable risk of deleterious effect during lifetime.

Additional standards or requirements may also apply. Under the HSWA amendments, releases that have migrated beyond the facility boundary would need to be remediated or controlled as soon as practicable. Furthermore, treatment, storage or disposal of wastes (generated as a result of cleanup activities) will have to be performed in accordance with the requirements for the management of remediation waste [see Hazardous Waste Identification Rule (HWIR)-Media final rule (63 FR 65874, November 30, 1998)]. Finally, EPA's finalization of LDR treatment standards for hazardous contaminated soil as part of the LDR Phase IV final rule (63 FR 28604, May 26, 1998) may influence the selection of cleanup standards.

Could conditional remedies be considered final remedies?

In some cases, conditional remedies could, at some future time, be considered final remedies. For example, natural attenuation or other factors may act to reduce contaminant concentrations at some time after conditional remedies are established. If the conditional remedy is determined to have achieved final media cleanup standards, and can be shown to be protective of human health and the environment, it may be declared a final remedy. If, however, it is determined by the EPA Regional Administrator or authorized State that further corrective action is required to satisfy the requirements for a final remedy, additional remedies may be required.

How do conditional remedies relate to corrective action management units (CAMUs) and temporary units (TUs)?

RCRA regulations for CAMUs and TUs were finalized on February 16, 1993 (58 FR 8658). The EPA defined a CAMU as "an land area within a facility that has been designated by EPA or an Authorized State for management of wastes generated during corrective actions" (i.e., remediation wastes). A TU is a tank or container storage area that can be used for temporarily treating or storing remediation wastes (Ref. 3). As an element of its final HWIR-Media rule, EPA modified the definition of CAMU to mean "an area within a facility that is used only for managing remediation waste for implementing corrective action or cleanup at the facility" (63 FR 65874, November 30, 1998). The EPA wanted to clarify that CAMUs are not restricted to wastes generated solely through specific RCRA regulatory mechanisms, or to clean-up wastes generated solely at RCRA treatment, storage or disposal facilities. For example, CAMUs

can now be designated at a remediation-only facility that operates under a remedial action plan (RAP) or other permit. See the final HWIR-Media rule for details.

Furthermore, EPA in the the CAMU Amendments final rule (Ref. 4): (67 FR 2962; January 22, 2002)

- established as "Grandfathered CAMUs" those CAMUs that were approved before April 22, 2002, or for which substantially complete RCRA permit applications (or equivalents) were submitted to the permitting agency on or before November 20, 2000;
- subjected other CAMUs to more detailed design, operating, and treatment standards; and
- limited other CAMUs to managing a separate subcategory of remediation waste termed "CAMU-eligible waste," while allowing Grandfathered CAMUs to continue operating under the 1993 CAMU rule, including the receipt of remediation waste.

CAMUs and TUs were intended to provide greater flexibility for decision makers in implementing protective, cost effective, and reliable remedies. CAMUs and TUs may be incorporated into a conditional remedy when consolidation, or treatment, or disposal of CAMU-eligible wastes or remediation wastes is required. Remediation wastes includes "all solid and hazardous wastes, and all media (including groundwater, surface waste, soils, and sediments) and debris that are managed for implementing cleanup (40 CFR 260.10). CAMU-eligible waste incorporates the redefinition of remediation waste; however, EPA added additional restrictions explicitly identifying those wastes that *cannot* be placed in CAMUs (40 CFR 264.552(a)(1)). In either case, however, the management of remediation wastes within "Grandfathered" CAMUs and CAMU-eligible waste in other CAMUs will not be subject to RCRA minimum technology requirements (MTR) and land disposal restrictions (LDRs) (58 FR 8666 and 67 FR2964).

DOE has published Environmental Guidance Regulatory Bulletins on the HWIR-Media final rule (June 1999) and CAMU Amendments (July 2002), that may also be reviewed for details [Both the HWIR-Media and CAMU Amendments bulletins may be downloaded for viewing on the OEPA website under "Policy and Guidance" (listed under "H" and "A," respectively) at <http://tis-nt.eh.doe.gov/oepa/>].

How do conditional remedies relate to phased remedies?

While phased remedies were initially proposed in the Subpart S proposed rule, which has been withdrawn, phasing was referred to within EPA's 1996 ANPRM (61 FR 19432, May 1, 1996). In the ANPRM, EPA established seven basic operating principles for RCRA corrective action. The 4th principle was that activities at corrective action facilities should be phased. EPA indicated that significant efficiencies can be gained by phasing corrective

action at individual facilities to focus on areas of the facility that represent the greatest risk to human health and/or the environment. Phasing allows information obtained from previous phases to be used for planning and refining subsequent investigations or responses. Using a phased approach, response actions can be taken at some high-priority areas of the facility while other lower-priority areas are addressed at a later time.

A RCRA corrective action phased remedy might be analogous to the CERCLA operable unit (OU), where a remedy may be separated into phases performed over time, provided that the phased remedies are consistent with the final remedy. A conditional remedy may be performed as a phased remedy if so specified in the facility permit. The conditional remedy, then, may be considered as a type of phased remedy.

What mechanisms can be used to implement conditional remedies at DOE facilities?

The term “mechanism” here is used to portray the type of tool that EPA or the authorized state can employ to compel a facility to conduct RCRA corrective action. The same mechanisms may be used under RCRA corrective action to implement any type of requirement, including a conditional remedy. The basic mechanism that would typically be used would be the RCRA permit or permit modification. In accordance with the guidance provided in the ANPRM, other mechanisms may be used as well (61 FR 19432, May 1, 1996). The EPA indicates in the ANPRM that corrective action obligations should be addressed using the most appropriate tool for any given facility. EPA recognizes that there are many mechanisms or tools which can be used to ensure appropriate corrective action at any given facility, including RCRA orders [RCRA §3008(h)] or permits, state cleanup orders, and voluntary cleanup programs. Each mechanism has advantages and disadvantages when applied to individual facilities. The EPA indicates in the ANPRM that program implementors and facility owners/operators should carefully consider these advantages and disadvantages when choosing a corrective action mechanism. The EPA intends that equivalent environmental results will be achieved regardless of the mechanism used to compel action. For additional details on alternate mechanisms that can be used to compel RCRA corrective action, see also EPA’s 1998 final rule on Post-Closure regulations (63 FR 56709, October 23, 1998). DOE published an Environmental Guidance Regulatory Bulletin titled *Standards Applicable to Owners and Operators of Closed and Closing Hazardous Waste Management Facilities: Post-Closure Permit Requirement and Closure Process* (63 FR 56710), that may be downloaded for viewing on the OEPA website under “Policy and Guidance” (listed under “S”) at <http://tis-nt.eh.doe.gov/oeпа/>.

Questions of policy or questions requiring policy decisions will not be dealt with in EH-413 Information Briefs unless that policy has already been established through appropriate documentation. Please refer any questions concerning the subject material covered in this Information Brief to:

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