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Superfund Cleanup Standards Reconsidered

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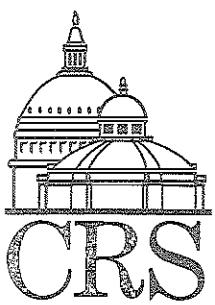

Superfund Cleanup Standards Reconsidered

SUMMARY

The reauthorization of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), commonly known as Superfund, has focused on two major areas of reform: liability, and cleanup standards/remedy selection. This report focuses on the latter. Within that general topic, six issues that have received attention from a number of stakeholders are discussed in this report: the role of risk assessment; cost-effectiveness of treatment; complete or partial elimination of what are called ARARs (the statutory requirement that Applicable or Relevant and Appropriate Requirements from other laws be applied to Superfund site cleanups) and elimination of the statute's preference for permanence and treatment; future land use considerations; the role of the States; and community involvement in the remedy selection process. The report contains brief summaries of the pertinent provisions of the leading House and Senate bills late in the first session of the 104th Congress.

To address the criticism that the Superfund program favors excessively costly remedies, some critics call for changes to the Environmental Protection Agency's (EPA's) risk assessment procedures and for an increased role of risk assessment in the remedy selection process. Other recommended reforms include establishing a single national risk criterion for cleanup decisions rather than the current use of risk ranges. Some suggest elevating the importance of cost in EPA's evaluation of alternative cleanup strategies. Cost is currently considered in evaluating alternatives; however, critics claim that the statute's deference to ARARs and its preference for permanence and treatment have led to high cleanup costs. The reliance on ARARs for determining site specific cleanup standards has been cited as causing lengthy debates over which Federal or State regulations (or combinations thereof) apply to a site, and selection of more costly remedies than are necessary to protect human health and the environment.

Stakeholders who advocate elevating the role of risk assessment in the remedy selection decisionmaking process also urge increased consideration of a Superfund site's future land and water use. Many of these stakeholders advocate that State and local governments, rather than EPA, decide future land and groundwater use. The current system of shared Federal and State responsibility leads to delay, duplication of effort, confusion among stakeholders, and higher transaction costs, critics claim. Some States want full Superfund authority; others want delegation of the Federal program. Some stakeholders are in favor of full authority for the States, while others are concerned about the burden on businesses that responding to as many as 50 programs would create. Community involvement in decisionmaking is a further locus of controversy.

Though often heavily criticized, since its passage, Superfund has improved management of hazardous wastes to protect human health and the environment.

NOTE

Lisa Gray prepared this report as an American Society of Mechanical Engineers/American Association for the Advancement of Sciences Congressional Science Fellow, working within the Environment and Natural Resources Policy Division of the Congressional Research Service during the summer of 1995.

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INTRODUCTION

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA)[1], also known as Superfund and administered by the Environmental Protection Agency (EPA), provides for cleanup, and emergency response for hazardous substances released into the environment, cleanup of inactive hazardous waste disposal sites, and for retroactive, strict, joint and several liability for potentially responsible parties (PRPs).

The Superfund Amendments and Reauthorization Act of 1986 (SARA) revised and expanded CERCLA and introduced new cleanup standards into the program in an attempt by Congress to add statutory language which would clarify for Federal officials and PRPs appropriate cleanup remedies to be selected for contaminated sites. The intent was to improve the quality and pace of site remediation.

In 1995, the cleanup of hazardous waste sites is slow. Many believe that changes to the program are needed to speed up the pace. Changes to the program can improve administrative aspects of cleanup; however, actual progress will still be largely dependent on technological capabilities. The current debate on the reauthorization of Superfund has focused on two major areas of reform: liability, and cleanup standards/remedy selection.[2] This report discusses existing cleanup standards, and recommendations and proposals for change offered by stakeholders in this debate. This report relies primarily on proceedings from congressional hearings of three subcommittees with jurisdiction over Superfund authorization, namely: Senate Committee on Environment and Public Works, Subcommittee on Superfund, Waste Control, and Risk Assessment; House Committee on Commerce, Subcommittee on Commerce, Trade, and Hazardous Materials; and House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment. The House Ways and Means and the Senate Finance Committees have jurisdiction over Superfund's taxing and trust fund provisions, which are not discussed in this report.

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[1] 42 USC 9601-9675.

[2] This report does not discuss liability issues. See Congressional Research Service Issue Brief IB95013, *Superfund Reauthorization Issues in the 104th Congress*, latest revision, for a discussion of liability and other issues.

While SARA has brought additional statutory requirements forth, further defining the question of "How clean is clean?", it has also opened up a new debate. Among the questions being asked during the debate are:

- Should cleanup decisions be based more on risk assessment considerations and less on fixed numerical criteria, such as drinking water standards for ground water?

- Is the statute's preference for treatment and permanent solutions reasonable?

- How much weight should the cost of a remediation be given in the cleanup decision?

- Should cleanup decisions be based on a single or a range of health risk values? and

- Do scientists have the capability to accurately predict health effects from various levels of exposure for all who may come in direct or indirect contact with a hazardous substance?

SARA's cleanup standards provisions have been criticized since their enactment in 1986. The law's current lack of a national uniform level of cleanup has proved to be a major source of controversy for the Superfund program. The 1995 reauthorization debate has provided a forum for stakeholders to outline their recommendations and proposals for reform. The following issues have arisen in the debate and are discussed in this report: the role of risk assessment; cost-effectiveness of treatment; the role of the States; elimination of applicable or relevant and appropriate requirements (ARARs) and preference for treatment and permanence; future land, groundwater and other resource use; and community involvement in the remedy selection process. The following paragraphs outline some stakeholder concerns with the current program and their suggestions for reform.

EPA and the States determine cleanup standards for each site based on statutory requirements and preferences, and based on ARARs, which are State and Federal laws and regulations determined to be applicable, or relevant and appropriate. EPA uses risk assessments to set cleanup levels if no standards have been established for the contaminants at the site.

The selection of applicable, relevant and appropriate laws and regulations is highly discretionary because each site has its own set of unique conditions which must be evaluated. Many have argued that this and other factors have led to confusion about which cleanup levels are required, cleanup costs that are often high, and sites that have been cleaned to different risk goals. One possible solution, offered by a number of stakeholders, is placing more emphasis on risk assessment (and eliminating the ARARs requirement) when determining how clean a site should be rendered (hereinafter referred to as cleanup level). The elimination of the statute's ARARs requirement would result in less costly site

remediations and savings to the Superfund program, critics claim. Some would also like to see modification of EPA's risk assessment methods to reduce reliance on what they see as overly protective assumptions and models.

The Superfund program has also been criticized as being too slow in achieving its goal. Delays have been attributed to the statute's ambiguity regarding cleanup levels, as well as other factors. To address this issue, some participants in the Superfund reform debate advocate establishing a single, national risk management goal which would also provide equal protection from hazardous waste for all communities.

Potentially responsible parties have complained that EPA has little regard for the cost-effectiveness of its selected remedies. CERCLA requires the implementation of cost-effective remedial actions for contaminated sites; however, it also requires that the degree of cleanup "at a minimum assures protection of human health and the environment."[3] One of the challenges of the current Superfund reauthorization effort is to calibrate these goals in combination and produce workable solutions. Some reform proposals seek to elevate the importance of cost considerations in the Superfund remedy selection process. Others want to reduce costs by facilitating selection of remedies that have historically been effective (often referred to as presumptive remedies).

Some have called for complete or partial elimination of the ARARs requirement in order to streamline the process used to establish site cleanup standards and to enable EPA to place heavier emphasis on risk assessment and cost of a remedial action.

In addition to eliminating the ARARs requirement, critics call for the elimination of the statutory preference for permanent treatment solutions. Instead, they argue, cleanup decisions should be based on risk assessments and cost considerations. Containment measures, institutional controls such as deed restrictions, and treatment should be considered equally, they claim.[4] Some believe that a preference for treatment should be reserved for "hot spots" of contamination.

There is broad consensus that future land use must be considered in determining the appropriate cleanup standard on which to base a remedial design. Appropriate consideration of land use is expected to lead to more cost-effective cleanups at a reasonable pace. Land use is currently considered in the remedy selection process. However, critics claim that States and local governments should have more input into future land use determinations. Others argue that if cleanup decisions are not based on conservative land use

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[3] CERCLA, Section 121(d)(1).

[4] See e.g., Chemical Manufacturer's Association. Testimony submitted to the House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and the Environment. *Superfund Reauthorization.* June 20, 1995. Hearing, 104th Congress, 1st Session. Washington, D.C., Govt. Print. Off. [to be printed].

assumptions (i.e., residential or recreational, as opposed to industrial), communities which are located near non-residential areas, for example industrial sites, will be at greater health risk than those communities which are not located near such sites.

Some stakeholders claim that the current system of shared Federal and State responsibility is responsible for delay, duplication of effort and confusion among stakeholders. The issue is whether States should be given full program authority or whether States should be given program delegation. program. *Full program authority* would enable States with such authority to implement their own versions of a Superfund program, while *program delegation* would give States the authority to implement the Federal program. Others oppose any increase in State responsibility.

The success of Superfund is measured not only by the number of sites cleaned and the costs associated with running the program, but also by public acceptance of treatment decisions which affect their communities. SARA recognized the importance of community involvement with the introduction of the Technical Assistance Grants (TAG) program. This year, suggestions for reform of the program include increased and earlier community involvement in the decision-making process, simplification of application procedures for TAGS, elimination of the matching funds requirement, and elimination of some time restrictions.

On October 18, 1995, Rep. Michael G. Oxley introduced H.R. 2500, the Reform of Superfund Act of 1995. The comprehensive reauthorization bill would set general standards for Superfund cleanup remedies to "protect human health and the environment from realistic and significant risks through cost-effective and cost-reasonable means." Remedies would be required to prevent human ingestion of drinking water containing hazardous substances above the Safe Drinking Water Act's maximum contaminant levels, or above the level needed to protect human health from other contaminants. Reasonably available site-specific data are to be used.

The bill would eliminate ARARs and CERCLA's preference for permanence and treatment, and direct EPA (or the administering State agency) to consider all cleanup options without preference or bias for any method. Proposed remedies will consider future uses of land, water, and other resources. Site-specific risk assessments must also be conducted. A remedy would be selected after consideration of its effectiveness, reliability, the risks it presents, community acceptance, and reasonableness of its cost compared to other remedies. Generic remedies and institutional controls may be employed where appropriate.

Sen. Robert Smith, chair of the Environment and Public Works Subcommittee on Superfund, Waste Control, and Risk Assessment, introduced S. 1285, the Accelerated Cleanup and Environmental Restoration Act of 1995 on September 29. The bill would base cleanup decisions on the "actual or plausible risks to human health and the environment," and would choose the most cost-

effective remedy that accomplishes that goal.[5] Remedial actions would be selected according to site-specific conditions and risks based on the reasonably anticipated future use of the site.

The Smith bill also would eliminate the requirement that remedial actions meet ARARs, and it removes the preference for permanence and treatment. It proposes a higher level of protection for groundwater that is currently uncontaminated, it would allow the de-listing and reuse of the uncontaminated portions of Superfund sites, and it provides for expedited de-listing of sites where construction is completed, but operation and maintenance activities continue.

CLEANUP STANDARDS -- WHAT THE CURRENT LAW REQUIRES

The original Superfund statute included little guidance for regulators or PRPs when evaluating alternatives for Superfund site cleanups. "Section 104(c)(4) of CERCLA required selection of remedial actions that were in accordance with the National Contingency Plan 'to the extent practicable' and that provided for 'cost-effective response which provides a balance between the need for protection of the public health and welfare ... and the availability of amounts from the fund....'"[6] CERCLA's cleanup requirements proved to be subject to interpretation, and cleanup decisions were often subject to delay and challenge.

In 1986, SARA introduced new Superfund cleanup standards. The new standards, which are in effect today, were Congress' attempt at providing statutory guidance on the question of "how clean is clean?" They required compliance with ARARs, which are the "applicable or relevant and appropriate requirements" which EPA and other agencies must comply with when determining cleanup standards to be followed for wastes treated onsite. CERCLA does not contain its own cleanup standards; rather, the statute relies on ARARs to ensure that 1) response actions are protective of human health and the environment, and 2) applicable State and Federal laws and regulations are not violated during the cleanup procedure. Further, SARA required that numerical standards derived from the Safe Drinking Water Act (SDWA) and water quality criteria established under the Federal Water Pollution Control Act would be applicable to the cleanup process if determined relevant and appropriate.

CERCLA, as amended, also states a strong preference for permanence and treatment of wastes, and discourages off-site disposal options:

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[5] Sen. Robert T. Smith. Title-by-Title Summary. *Congressional Record*, Sept. 29, 1995. p. S 14736.

[6] Hayes, David J., and Conrad B. MacKerron. *Superfund II: A New Mandate*. The Bureau of National Affairs, v. 17, no. 42, February 13, 1987. p. 37.

> Remedial actions in which treatment which permanently and significantly reduces the volume, toxicity or mobility of the hazardous substances, pollutants, and contaminants is a principal element are to be preferred over remedial actions not involving such treatment.[7]

For cases in which no ARARs have been established, CERCLA requires selecting remedial actions that assure protection of human health and the environment and that are relevant and appropriate.[8] In practice, cleanup levels are generally chosen to protect users or receptors from unacceptable cancer and non-cancer health risks or adverse environmental effects.[9] Such levels are generally chosen to protect people at least to a level within the range of 10^{-4} to 10^{-6} (1 in 10,000 to 1 in 1,000,000) lifetime cancer risk or below a predetermined index for non-carcinogens.[10]

It was hoped that SARA would increase the quality and pace of waste cleanups. Some progress has been made since 1986; however, there is general agreement that the cleanup of hazardous waste sites remains slow.[11] Today, the debate focuses more on questions of economy, though it is recognized that improvements in the quality and pace of cleanups must be pursued.

THE ROLE OF RISK ASSESSMENT

The Superfund cleanup standards and remedy selection process have been broadly criticized by groups including the manufacturing and insurance industries, local and State governments, Federal agencies involved in Superfund cleanups, environmental and community groups, and members of the engineering and scientific community.[12] Many believe that the current

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[7] CERCLA §121(b).

[8] CERCLA Section 121 (d)(1).

[9] U.S. Environmental Protection Agency. Office of Solid Waste and Emergency Response. *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration*. EPA/540-R-93-080. September 1993. p. 9.

[10] Ibid.

[11] See, e.g., U.S. Congress. House. Committee on Public Works and Transportation, Subcommittee on Investigations and Oversight. *Administration of the Superfund Program*. House Report No. 103-35, 103d Congress, 1st Session. Washington, U.S. Govt. Print. Off., 1993. p. 26.

[12] See, e.g., Frank L. Parker, Ph.D., Distinguished Professor of Environmental Engineering, Vanderbilt University. Testimony submitted to the Senate Committee on Environment and Public Works, Subcommittee on Superfund, Waste Control, and Risk Assessment. *Oversight Hearing Regarding the Comprehensive Environmental Response, Compensation, and Liability Act.* May 9, 1995. 104th Congress, 1st Session. Washington, D.C., Govt. Print. Off. [to be printed].

Superfund program favors excessively costly remedies and is responsible for the slow pace of cleanups.

To address these problems, some critics would like to see changes in EPA's risk assessment procedures as well as a larger role for risk assessment in the remedy selection process. Other critics believe that EPA's current use of risk ranges is unacceptable; they advocate the establishment of a single national risk criterion for cleanup decisions.

Risk assessment is defined broadly as the determination, through formal or informal scientific procedures, of probable health and other effects from exposure to a potential danger (the term is also applied to the field underlying and establishing such determinations). For purposes of this report, risk assessment refers to various EPA methods for evaluating and comparing risks at Superfund sites.[13]

EPA currently uses risk assessment at several points in the Superfund program. It first conducts rough risk assessments at each site to determine whether contaminants pose a current or potential threat to human health or the environment. If EPA determines that a site poses a significant threat, it is added to the National Priorities List (NPL). These risk assessments adhere to methods detailed in the National Contingency Plan (NCP, codified at 40 CFR 300). Appendix A to the NCP describes the Hazard Ranking System (HRS) as:

> the principle mechanism the U.S. Environmental Protection Agency (EPA) uses to place sites on the National Priorities List (NPL). The HRS serves as a screening device to evaluate the potential for releases of uncontrolled hazardous substances to cause human health or environmental damage. The HRS provides a measure of relative rather than absolute risk. It is designed so that it can be consistently applied to a wide variety of sites.[14]

For NPL sites risk assessment is then used to determine the necessary level of cleanup and to evaluate appropriate cleanup remedies. The remedial investigation and feasibility study (RI/FS) phase of EPA's Superfund program, established under CERCLA section 120(e), uses risk assessment to characterize the nature and extent of risks posed by uncontrolled hazardous waste sites and for evaluating potential remedy options. The remedial investigation (RI) gathers information sufficient to support a risk management decision, including likely current and future risk associated with human exposures to releases from the site. The feasibility study (FS) develops, screens, and evaluates alternative remedial actions. It is during the FS phase that cleanup goals aimed at protecting human health and the environment are determined. Preliminary

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[13] For more information about risk assessment see U.S. Library of Congress. Congressional Research Service. *Risk Analysis and Cost-Benefit Analysis of Environmental Regulations*. Report No. 94-961 ENR. Washington, 1994.

[14] 40 C.F.R. Part 300, Appendix A, section 1.0.

remedial action objectives based on readily available information such as ARARs and numerical criteria are developed first. The final remedial action objectives are determined based on results of the baseline risk assessment and an evaluation of expected exposures and associated risks for each alternative.

As described by EPA, the intent of the RI/FS process is to provide a "dynamic, flexible process that can and should be tailored to specific circumstances at individual sites; it is not a rigid step-by-step approach that must be conducted identically at every site."[15] Many have contended that in practice, this flexibility is not applied and that costly remedies are more often selected than cost-effective ones. It has been argued that the current risk assessment process is responsible for selection of exceedingly costly remedies. An EPA guidance document on the RI/FS process addresses the challenges faced by project managers:

> The project manager's central responsibility is to determine how best to use the flexibility built into the process to conduct an efficient and effective RI/FS that achieves high quality results in a timely and cost-effective manner. A significant challenge project managers face in effectively managing an RI/FS is the inherent uncertainties associated with the remediation of uncontrolled hazardous waste sites.[16]

Some criticize EPA's cautious approach at exercising the flexibility built into the statute; however, one reason EPA takes this approach is because information to assess health risks completely is still not available, and it has been shown that health effects are linked to exposure to toxic wastes. In addressing the link between health effects and exposure to toxic substances, Barry L. Johnson, Ph.D., Assistant Administrator of the Agency for Toxic Substances and Disease Registry (ATSDR -- the Agency responsible for health-related authorities under CERCLA) testified about health effects from exposure to hazardous substances.[17] In summary, ATSDR found that proximity to hazardous waste sites seems to be associated with a small to moderate increased risk of some kinds of birth defects and, less well documented, some specific cancers and health problems.

Those who support EPA's cautious approach (including some in the scientific community) claim that scientists may have been too optimistic in assessing health implications from exposure to toxics (that is, they may underestimate risk). Because critical information about the link between

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[15] U.S. Environmental Protection Agency. *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA*. EPA/540/G-89/004. October 1988.

[16] Ibid.

[17] Barry L. Johnson, Ph.D., Assistant Surgeon General, Public Health Service, U.S. Department of Health and Human Services. Testimony submitted to the House Committee on Commerce, Subcommittee on Commerce, Trade, and Hazardous Materials. May 23, 1995. 104th Congress, 1st Session. Washington, D.C.

hazardous waste and health effects is still lacking, it is necessary for EPA to use adequate safety margins in their health assessments, they maintain. ATSDR asked the National Research Council (NRC) to review current knowledge of human health effects caused by exposure to hazardous waste sites. Their 1991 report maintained: "Until better evidence is developed, prudent public policy demands that a margin of safety be provided regarding potential health risks from exposures to substances from hazardous waste sites."[18] It explained, "We do no less in designing bridges and buildings. We do no less in establishing criteria for scientific credibility. We must surely do no less when the health and quality of life of Americans are at stake."[19]

Critics of EPA's risk assessment methodology believe that such caution precludes the choice of less costly remedies. For example, the National Environmental Policy Institute has attacked EPA's method of estimating risk, claiming that worst case scenarios are used when more moderate ones could sufficiently protect human health and the environment.[20] In response, Elliott Laws, Assistant Administrator for EPA's Office of Solid Waste and Emergency Response testified that:

> Prior to 1990, Superfund risk assessments relied heavily on the 'worst case scenario.' Since then we have used a peer reviewed guidance for risk assessments that employs site specific information on contaminant concentrations, exposure pathways and land use, which make the risk assessment more realistic. EPA's current risk assessment process seeks to protect the majority of individuals near Superfund sites.[21]

It is also argued that the current risk assessment process is too flexible and consequently responsible for differing cleanup goals, remedies, and costs site-by-site across the country. A number of stakeholders, including environmental organizations, State and local governments, and environmental health organizations call for the establishment of a single risk management goal.

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[18] National Academy of Sciences, National Research Council. *Environmental Epidemiology Public Health and Hazardous Wastes.* Washington, D.C., National Academy Press, 1991. p. 21

[19] Ibid. p. 270.

[20] Steven J. Milloy, National Environmental Policy Institute. Testimony submitted to the Senate Committee on Environment and Public Works, Subcommittee on Superfund, Waste Control, and Risk Assessment. Oversight hearing regarding the Comprehensive Environmental Response, Compensation, and Liability Act. April 5, 1995. 104th Congress, 1st Session. Washington, D.C., U.S. Govt. Print. Off. [to be printed].

[21] Elliott P. Laws, Assistant Administrator, Environmental Protection Agency. Testimony submitted to the Senate Committee on Environment and Public Works, Subcommittee on Superfund, Waste Control, and Risk Assessment. Oversight hearing regarding the Comprehensive Environmental Response, Compensation, and Liability Act. April 5, 1995. 104th Congress, 1st Session. Washington, D.C., U.S. Govt. Print. Off. [to be printed].

Environmental organizations and community groups have been opposed to EPA's use of the risk range, described in the Cleanup Standards section of this report, because it affords EPA the latitude to provide communities with a 100-fold difference in protection without explanation.[22] The National Governor's Association (NGA) agreed by testifying that [eliminating use of the risk range] "will greatly increase the pace of cleanup and ensure equal protection for all citizens of this country."[23] PRPs and communities have often been left wondering how and why a particular cleanup remedy was selected. It has been argued that establishing a national risk protocol would avoid site-by-site debate and confusion by requiring EPA to develop national cleanup models and standards. Last year, the Administration's Superfund reauthorization bill (H.R.3800/S.1834) included the establishment of national cleanup goals and methodologies.

The House draft bill requires EPA to establish a national risk protocol. Risk assessments performed under the Act "shall provide scientifically objective and unbiased estimates and characterizations which neither minimize nor exaggerate the nature and magnitude of risks."[24] For drinking water, the bill states that Superfund cleanup remedies shall prevent ingestion of water that does not meet the Safe Drinking Water Act's maximum contaminant levels. For "non-threshold carcinogens" (those with no known safe level of ingestion), a remedy shall be considered protective of human health if it "limits cumulative, lifetime additional cancer risk from exposure ... to within the range of one in 10,000 to one in 1,000,000 for the affected population."[25]

S. 1285 states that remedies are to be selected according to site-specific conditions and risks based on future use. Like the House draft, a remedy would be considered to protect health if it has a risk range for cancer resulting from exposure at the facility of from one in 10,000 to one in 1,000,000 for the affected population; and exposure to non-carcinogens does not pose an appreciable risk of deleterious effects. Remedial actions would be selected according to exposure pathways based on future use (industrial, commercial, residential, etc.); site-specific testing data; and where that data is unavailable, an acceptable range of realistic and plausible default assumptions regarding human exposure and site-

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[22] Karen Florini, Senior Attorney, Environmental Defense Fund. Testimony submitted to the House Transportation and Infrastructure Committee, Subcommittee on Infrastructure and Environment. Superfund Reauthorization: Environmental and Community Groups. June 21, 1995. Hearings, 104th Congress, 1st Session. Washington, D.C., U.S. Govt. Print. Off. p. 9.

[23] Richard J. Gimello, National Governor's Association. Testimony submitted to the Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment. Superfund Reauthorization: State and Local Perspectives. June 13, 1995. Hearings, 104th Congress. 1st Session. Washington, D.C., Govt. Print. Off. [to be printed].

[24] Section 101, adding new section 127(a)(1).

[25] Section 102, in amended CERCLA section 121(b)(3).

specific conditions, instead of worst case assumptions. The following balancing factors are to be considered in selecting a remedy: effectiveness in protecting health; long-term reliability; short-term risks during cleanup; acceptance by the community; and technical practicability.

COST-EFFECTIVENESS OF TREATMENT

CERCLA's lack of national standard cleanup levels, its reliance on ARARs, and its preference for permanent cleanups and use of treatment technologies have been attributed to cleanup remedies which are more stringent and more costly than necessary to protect human health. The existing statutory requirements for remedial actions specifically call for consideration of the cost-effectiveness of the selected remedy. Cost is one of nine evaluation criteria which EPA uses when analyzing alternatives for a remedial action.[26] However, EPA recognizes that in practice, cleanup costs are often high due to the statute's deference to ARARs and its preference for permanence and treatment.[27]

A number of stakeholders have offered proposals which would instruct the EPA to consider the cost-effectiveness of a cleanup solution as a major factor in its evaluation of alternates.

One suggestion to reduce program costs is to permit use of "presumptive remedies" or remedies that EPA has historically used at particular categories of sites which could be preapproved in order to avoid costs of extensive analysis currently required.

The Department of Defense (DOD), which has about 125 NPL sites, has proposed reforms intended to cut costs and speed the cleanup of contaminated sites. At a House Committee on Transportation and Infrastructure hearing, DOD recommended modifications to the remedy selection process, one of which was:

> Elevate the role of cost when considering other factors in remedy selection. Currently, cost-effectiveness is one of nine considerations regulators use in making a cleanup decision. By elevating the

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[26] U.S. Environmental Protection Agency. Office of Emergency and Remedial Response. *Guidance for Conducting Remedial Investigative and Feasibility Studies Under CERCLA*. October 1988. p. 6-3.

[27] Carol M. Browner, Administrator, U.S. Environmental Protection Agency. Testimony submitted to the House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment. *Superfund Reauthorization: Federal Agency Perspectives*. June 27, 1995. Hearing, 104th Congress, 1st Session. Washington, D.C., U.S. Government Print. Off. [to be printed].

importance of cost, we can provide a more prudent use of our resources.[28]

House-passed H.R. 9, The Job Creation and Wage Enhancement Act, part of the Republican Contract with America package, addresses this topic by requiring in Division D that a cost-benefit analysis be conducted on any Superfund remediation remedy selected by EPA which is expected to cost over $5 million. This means that such a remedy must be cost-effective and the incremental costs of the remedy must be reasonably related to the incremental benefits.[29] Since the average cost of cleanup is $25-30 million, virtually all NPL sites would be subject to this provision. This provision has caused concern for some environmental groups, including the Environmental Health Network, that fewer cleanups will be accomplished regardless of human health considerations. Another concern is that all cleanups will be slowed down to accommodate the additional cost-benefit analysis. S. 343, The Comprehensive Regulatory Reform Bill of 1995, is similar to H.R. 9, has been debated on the floor, and is still pending.

Rep. Oxley's H.R. 2500 rewrites CERCLA's section 121 on remedy selection, and sets out the general standard that remedies selected "shall be those necessary to protect human health and the environment from realistic and significant risks through cost-effective and cost-reasonable means." Cost is one of five factors to be considered in selecting the remedy.[30] The preferred remedy is the one that "adequately protects human health and the environment from realistic and significant risks at the lowest total cost." Other provisions encouraging economy are the use of generic remedies where they would be cost-effective and appropriate; a review of new procedures for conducting RI/FSs in an efficient, cost-effective, and timely manner; use of institutional controls (such as restrictions on the use of the land or surface water, or restrictions on drilling wells or the use of groundwater); and eliminating any procedural requirements, including local permitting when the response action is carried out on-site.

The selected remedy is to be the one which provides protection of health and the environment in the most cost-effective manner. If achieving the cleanup goals at a site is technically impracticable or unreasonably costly, a technically

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[28] Sherri W. Goodman, Deputy Under Secretary of Defense. Testimony submitted to the Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Infrastructure. *Superfund Reauthorization: Federal Agency Perspectives*. June 27, 1995. Hearing, 104th Congress, 1st Session. Washington, D.C., Govt. Print. Off. [to be printed].

[29] This provision was originally passed in the House as H.R. 1022 and was subsequently included in H.R. 9, The Job Creation and Wage Enhancement Act, as Division D, the Risk Assessment and Cost-Benefit Act of 1995.

[30] The other four factors are the remedy's technical effectiveness; its long- and short-term reliability; risks to the community, cleanup workers, and the environment; and acceptability to the community, as represented by local elected officials.

practicable remedy is to be chosen that minimizes risk to health and the environment by cost-effective means. Also, EPA is directed to establish presumptive remedies for commonly encountered types of contaminated facilities; presumptive remedies are not limited to treatment, but may include institutional and standard engineering controls, such as restrictions on the permissible uses of land, prohibitions on specified activities upon the property, restrictions on the drilling of wells or other use of ground water, or restrictions on the use of surface water.

ARARs AND PREFERENCE FOR PERMANENCE AND TREATMENT

There is broad support for the elimination of the statute's ARARs requirement and preference for permanence and treatment. Critics argue that they have artificially tilted the remedy selection process towards more costly remedies than are necessary to protect human health and the environment. According to the General Accounting Office, cleanup levels established by standards, such as ARARs, are generally more stringent than cleanup levels established by risk assessments.[31] This supports the common assertion that cleanups based on standards are generally more costly than cleanups based on risk assessments. Debate over which Federal or State regulations (or combinations thereof) are relevant and appropriate at a given site has often been cited as time consuming. PRPs have an obvious interest in favoring the standard which is easiest and most economical to attain. EPA and State regulators frequently disagree on which regulations should apply. These negotiations can add months to the process.

CERCLA section 121(d)(2)(A) requires that selected remedial actions for hazardous wastes left on site attain legally Applicable or Relevant and Appropriate standards, Requirements, criteria, or limitations. State ARARs must be met if they are more stringent than the Federal requirements. Federal environmental laws cited in CERCLA include: the Toxic Substances Control Act, the Safe Drinking Water Act, the Clean Air Act, the Clean Water Act, the Marine Protection, Research and Sanctuaries Act, and the Solid Waste Disposal Act. CERCLA also requires that the remedial action "shall require a level or standard of control which at least attains Maximum Contaminant Level Goals established under the Safe Drinking Water Act and water quality criteria established under section 304 or 303 of the Clean Water Act, where such goals or criteria are relevant and appropriate under the circumstances of the release or threatened release".[32]

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[31] Lawrence J. Dyckman, Associate Director, U.S. General Accounting Office. Testimony submitted to the Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment. *Superfund Reauthorization: Members of Congress, Miscellaneous Issues*. June 22, 1995. Hearing, 104th Congress. 1st Session. Washington, D.C., U.S. Govt. Print. Off. [to be printed].

[32] CERCLA § 121(d)(2)(A). For carcinogens, EPA sets Maximum Contaminant Level Goals at Zero.

The Natural Resources Defense Council (NRDC) endorses replacement of Federal ARARs with a formula for setting standards and an explicit process for selecting treatment. They do not, however, endorse elimination of State ARARs requirements. State requirements which are more prescriptive than Federal ones should not be preempted, they argue.[33]

While some stakeholders in the debate call for eliminating the ARARs requirement, others call for eliminating only the relevant and appropriate requirements (RARs). This approach would keep the substantive demands found in Federal and State law that specifically address hazardous substances at a site ("applicable"), but drop those requirements that appear sufficiently similar that some EPA or State regulators might consider their use well suited to the particular site ("relevant and appropriate"). By reducing the number of regulations that can be argued over, presumably, the debate would be speeded up. If the ARARs requirement is eliminated, some advocate establishment of a national cleanup standard which could be used for all Superfund sites.

The House draft bill eliminates ARARs. As noted earlier, it directs EPA or the State administering agency to consider all options for addressing contamination at a site, including containment, treatment, institutional controls, natural attenuation, or a combination of these alternatives.

S. 1285 eliminates the requirement that remedial actions meet ARARS, although it notes that if the cleanup remedy requires hazardous materials to be removed from the site, they must be taken to a facility that is permitted to treat, store, or dispose of them. Institutional and engineering controls are to be considered on an equal basis with all other remedial action alternatives.

Section 121(b) of CERCLA requires a remedial action "that utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable." As noted above, many advocate eliminating this preference. Some advocate total elimination of this provision, while others advocate retaining the preference for permanent remedies and treatment at 'hot spots' only. Superfund Reform '95 (a broad coalition of the insurance industry, small and large businesses, and some local governments), calls for the elimination of the ARARs requirement and the preference for permanence and treatment. Instead, they call for "final decisions on remedy selection to be made by comparing the costs and net human health and environmental benefits of the alternatives, with priority for funding directed

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[33] Linda E. Greer, Ph.D. for Natural Resources Defense Council, Submitted Testimony. Senate Committee on Environment and Public Works, Subcommittee on Superfund, Waste Control, and Risk Assessment. Oversight hearing regarding the Comprehensive Environmental Response, Compensation, and Liability Act. April 5, 1995. 104th Congress, 1st Session. Washington, D.C., U.S. Govt. Print. Off. [to be printed].

at real and significant risks to human health".[34] The Department of Energy's Assistant Secretary for Environmental Management, Thomas P. Grumbly, before the Committee on Transportation and Infrastructure, Subcommittee on Water Resources and the Environment testified, "The current law's preference for treatment/permanence should be narrowed and replaced with the concept of long-term reliability and a preference for the treatment of 'hot spots'."[35] There appears to be consensus among stakeholders seeking these reforms that containment measures and institutional controls should be required for sites where permanent treatment is not achieved.

The House draft bill would eliminate CERCLA's preference for permanence and treatment. In lieu of permanence, the bill says that the reliability of the remedy over the short and long term is one of five factors to be considered and balanced in selecting the remedy.[36] Regarding treatment, the bill says that remediation may be accomplished through the use of one or more of the following: treatment, stabilization, source control, natural attenuation, containment, institutional controls, or other methods. "No preference or bias shall apply to any method of remediation," it states.

S. 1285 also eliminates the preference for permanence and treatment. And, like the House draft, it replaces permanence with the requirement that protectiveness over the long run be one of the balancing factors.

The "Technical Impracticability" Waiver

CERCLA identifies six circumstances which if met allow for the waiver of ARARs.[37] One of these waivers, the technical impracticability (TI) waiver, may be granted if "compliance with such requirements [ARARs] is technically impracticable from an engineering perspective".[38] EPA has issued a guidance document for evaluating the technical impracticability of ground-water

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[34] John F. Spisak, for Superfund Reform '95. Testimony submitted to the House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment. Hearings, 104th Congress. 1st Session. Washington, D.C., U.S. Govt. Print. Off. [to be printed].

[35] Thomas P. Grumbly, Assistant Secretary for Environmental Management, Department of Energy. Testimony submitted to the Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment. Hearing on *Superfund Reauthorization: Federal Agency Perspectives.* June 27, 1995. 104th Congress, 1st Session. Washington, D.C., U.S. Govt. Print. Off. [to be printed].

[36] The other four factors are the remedy's technical effectiveness; risks to the community, cleanup workers, and the environment; acceptability to the community, as represented by local elected officials; and the reasonableness of the remedy's cost.

[37] See CERCLA Section 121(d)(4).

[38] Ibid.

restoration.[39] The guidance is intended to promote "the careful and realistic assessment of the technical capabilities at hand to manage risks posed by ground-water contamination." Since issuing the guidance in 1993, EPA has promoted its implementation by establishing headquarters and regional contact personnel for transfer of TI related information, and by outlining a basic process for evaluation of TI decision documents. However, some critics in government and industry claim that EPA's approach to using this waiver authority greatly diminishes opportunities for cost savings. In practice, the implementation of "TI waivers" is often stymied by political issues such as some States' reluctance to accept the "TI waiver" option.

The most important application of the TI waiver is for the case of certain groundwater restorations. For example, the presence of dense nonaqueous-phase liquids, commonly known as DNAPLs[40], at hazardous waste sites has complicated many groundwater cleanups. Based on current technology, the attainment of drinking water standards (an ARAR) at sites contaminated with DNAPLS is impracticable.

A National Research Council (NRC) report discusses EPA's practical implementation of the TI waiver. EPA has issued a technical policy to address sites contaminated with DNAPLS which is "supported to a great extent by the committee's [NRC committee on Ground Water Cleanup Alternatives] technical review."[41] However, the NRC committee and other stakeholders are concerned with EPA's general practice of granting a TI waiver only after the cleanup remedy fails in attaining the initial goals. The NRC committee concluded, "Although the committee sees value in ensuring that best possible efforts are employed to address DNAPL contamination, a requirement that a remedial action be designed to achieve the impossible (based on current technology) is counterproductive."[42] Mr. Robert Frantz, Manager of General Electric's Remedial Program testified at a Senate Environment and Public Works Committee hearing that, "EPA gives little regard for cost or technical practicability" and that "For cases where ground water treatment has been shown to be incapable of meeting standards, an 'up-front' TI waiver should be granted."[43]

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[39] U.S. Environmental Protection Agency. *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration*. 1993.

[40] Some examples of compounds likely to exist as DNAPLs are chlorinated solvents, coal tars, and transformer oil.

[41] NAS, National Research Council. *Alternatives for Ground Water Cleanup*. Washington, D.C., National Academy Press, 1994. p. 258

[42] National Research Council p. 259.

[43] Robert W. Frantz, Manager Remedial Program, General Electric Company. Testimony submitted to the Senate Committee on Environment and Public Works, Subcommittee on Superfund, Waste Control and Risk Assessment. Oversight hearing

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The House draft bill allows for a finding of technical impracticability from an engineering perspective when considering the effectiveness of various remedies. The finding can be made on the basis of projections, modeling, or other site-specific analysis, and without first constructing or installing the remedy under consideration.

S. 1285 also allows EPA to make a finding that achieving the cleanup goals is technically impracticable; it would do so by determining that there is no known reliable means of achieving the cleanup goals at a reasonable cost, and that it has not been shown that such a means is likely to be developed in a reasonable period of time.

FUTURE LAND, GROUNDWATER AND RESOURCE USE

Many believe that to accomplish cleanups cost-effectively and at a pace that is conducive to the protection of human health and the environment, the future use of land, groundwater and other resources must be considered in determining the appropriate cleanup standard and the remedial design. Future uses are currently considered in the remedial investigation/feasibility study; however, critics argue that the statute encourages overly conservative risk assessments based on unrealistic exposure pathways. Stakeholders favoring these risk assessment reforms include the chemical industry, small and large businesses, the National Governor's Association, Local Governments for Superfund Reform, the Department of Energy, and the Department of Defense.

Three land use reforms frequently proposed are: use of actual or planned future land and other resource use during the remedial investigation/feasibility study; use of institutional controls such as deed restrictions to protect human health; and contaminated groundwater remedy selection based on future use and exposure, with treatment designated only for aquifers that are currently supplying drinking water or are reasonably expected to supply drinking water in the future.

Some environmental groups are cautious about any provisions that would make land use considerations central to the remedy selection decision-making process. Others, such as Friends of the Earth, go further and urge rejection of a preference for institutional controls and advocate the goal of restoration of all sites to a full range of uses[44]. The Natural Resources Defense Council (NRDC)

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[43](...continued)
regarding the Comprehensive Environmental Response, Compensation, and Liability Act. April 5, 1995. 104th Congress, 1st Session. Washington, D.C., U.S. Govt. Print. Off. [to be printed].

[44] Velma M. Smith, for Friends of the Earth. Testimony submitted to the House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and the Environment. Hearing on *Superfund Reauthorization: Environmental and*
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explains: "The reliance on land use to provide long-term protection to communities has long been difficult for the environmental community to accept, given the difficulties associated with both accurately predicting future needs for the land and limitations in our institutional capabilities to control for inappropriate future uses."[45] However, the NRDC also recognizes that "land can in some cases not be fully restored yet used productively for industrial purposes".[46] The NRDC does not hold the position that future land use must not be considered in remedy selection. They do, however, recommend that remedy selection decisions be agreed on by adjacent communities.

Organizations and groups active in the environmental justice movement are concerned that if more emphasis is placed on future land use considerations, communities located near areas considered to be less worthy of a high standard for cleanup will be at greater health risk than communities which are not located near such sites. Environmental justice pursues fair and equitable protection against any environmental hazard, including exposure to hazardous wastes, of *all people regardless of race or socioeconomic status*. The incorporation of a single national risk goal combined with consideration of a community's anticipated future land use and institutional controls, if necessary, might resolve this concern. Advocates for increased consideration of land use counter these arguments by claiming that risk management goals would not be lowered, and therefore human health protection would not be lowered.

The House draft bill would require that remedy selection take into account reasonably anticipated future uses of land, water, and other resources at a facility, as well as the timing of such uses. Future uses should have a "substantial probability" of occurring, and should consider: recommendations of the community; historical and current uses, as well as recent development patterns and population projections; Federal and State land uses such as parks, and groundwater recharge areas; local government zoning and land use plans; the potential for economic development; the property owners' plans; and alternative sources of drinking water.

S. 1285 states that the risk evaluation at each facility shall consider planned or reasonably anticipated future use of land and water resources. Future land use is a use determined by zoning, or a use with a "substantial

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[44](...continued)
Community Groups. June 21, 1995. 104th Congress, 1st Session. Washington, D.C., U.S. Govt. Print. Off. [to be printed].

[45] Linda E. Greer, Ph.D. for Natural Resources Defense Council, Submitted Testimony. Senate Committee on Environment and Public Works Subcommittee on Superfund, Waste Control and Risk Assessment. Oversight hearing regarding the Comprehensive Environmental Response, Compensation, and Liability Act. April 5, 1995. Hearings, 104th Congress. 1st Session. Washington, D.C., U.S. Government Print. Off. [to be printed].

[46] Ibid.

probability" of occurring based on recent development patterns and population projections. With regard to water, future use is that reasonably anticipated by a local government or by an authority that regulates groundwater use or planning in the vicinity. The bill would establish a higher level of protection for groundwater that is uncontaminated. Input is to be sought from the new Community Response Organizations proposed by the bill, local officials, planning and zoning authorities, facility owners, and PRPs.

THE ROLE OF STATES IN THE REMEDY SELECTION PROCESS

The current system of shared EPA and State responsibility for implementing and funding the Superfund program has led to significant delay and duplication of effort, and confusion among stakeholders, critics claim. States are better equipped to tailor remedies to sites within their borders in cost-effective fashion, and an expanded State role would result in faster cleanups with lower transaction costs, they say. Accordingly, a number of States want full Superfund authority.

The law does not provide for delegation of Superfund program authority to the States as it has for other environmental laws such as the Clean Water Act and RCRA. At present, EPA and States can enter into cooperative agreements on a site-by-site basis that authorize the States to undertake most of the cleanup activities the Agency would perform, excluding remedy selection. Full-program authority would enable States with such authority to implement their own versions of a Superfund program, while program delegation would give States the authority to implement the Federal program.

The Federal government has primary responsibility for implementing the Superfund program, though States play important roles in remedy selection and funding of Superfund site cleanups. Their standards and regulations are recognized by the ARARs requirement. Under current law, States carry a financial responsibility of 10 percent of Fund-financed cleanup costs, and the full cost of operation and maintenance of the selected remediation. In addition, the State must make off-site disposal facilities available if necessary and it must provide 20 years of hazardous waste treatment or disposal capacity for all hazardous waste reasonably expected to be generated within the State. A State is required to pay for 50 percent of all response costs if the State or a locality operated the site. If a State cannot fulfill these requirements, EPA cannot obligate trust fund money for the cleanup.

The National Governor's Association proposed:

> ...that all capable states interested in administering cleanups be authorized or delegated full or partial management of the remedial and emergency removal programs at NPL sites -- including federal facilities. This will accelerate cleanup, avoid duplication of effort, increase efficiency for government and the private sector, reduce transaction costs, provide greater certainty in the program, and

> maximize the effectiveness of limited state and federal resources.... It is important that such a program be voluntary and we recommend that EPA maintain a federal program in states that are unable to or [are] uninterested in pursuing authorization. Also critical to the success of state authorization is adequate funding and flexibility for the states.[47]

The Association of State and Territorial Solid Waste Management Officials (ASTSWMO) also supports the position that State delegation should be strictly voluntary and that delegation should be either full or partial depending on the abilities of the State.

Other stakeholders interested in increasing the role of the States include some local governments, PRPs including the DOD and the DOE, the insurance and manufacturing industries, and some not-for-profit organizations interested in Superfund reauthorization. Part of the problem with the current remedy selection process, these stakeholders claim, is that EPA has the authority to preempt a State-selected remedy. Further, the threat of EPA preemption causes participation in voluntary cleanup actions to be a risky venture, some witnesses say. A business that participates in voluntary cleanups may face CERCLA liability even after liability under State law is resolved. If States had full Superfund authority this risk would disappear, it is claimed. At least 21 States have voluntary cleanup programs for less serious hazardous waste sites.

Some community groups are apprehensive about the proposed State delegation and advocate judicious oversight by EPA if delegation occurred.[48] One concern is that some States will not be as conservative in their cleanup decisions as the Federal program, which would necessarily lead to less protection of human health and the environment, they claim. Some also believe that State public participation programs have not measured up to the Federal program. A community activist, Florence Robinson, urged in testimony before the House Commerce Committee: "Any state authorization, be it site-specific or statewide, should expressly require that a state provide the public with at least as much opportunity to participate as would occur under the federal program."[49]

Title V of the House draft would give States the power they have lobbied for, authorizing EPA to delegate authority to conduct virtually all cleanup activities, including remedy selection. It also would give them the ability to

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[47] R. Gimello testimony.

[48] Florence Robinson, North Baton Rouge Environmental Association, and the Communities at Risk Network. Testimony submitted to the House Committee on Commerce, Subcommittee on Trade, Commerce, and Hazardous Material. Hearing on the *Reauthorization of the Superfund Program focusing on State Role/Voluntary Cleanup*. June 15, 1995. 104th Congress, 1st Session. Washington, D.C., U.S. Govt. Print. Off. [to be printed]

[49] Ibid.

delist a facility from the National Priorities List when a State finds that no further action is needed to protect health and the environment. In addition, the bill would rewrite the existing remedy selection language in CERCLA section 121 to provide "substantial and meaningful involvement by each State in initiation, development, and selection of remedial actions." However, it would give no independent authority to States that have not been delegated it under Title V, but does give them the opportunity to participate in virtually every aspect of the remedy selection process.

S. 1285 empowers States to veto the listing of new NPL sites, and to de-list existing NPL sites. States may request delegation of all or a portion of Superfund authorities, including remedy selection. The bill designates the State as the sole regulator and allows the State to use its own remedy selection process at those sites where the State accepts all authority. The Fund continues to pay its share of cleanup costs at delegated sites, as long as the selected remedy is protective of human health and the environment, and is no more costly than the one that would have been selected under the Federal program. The bill provides for funding to delegated States, some of which is on a facility-specific basis, and some of which is not.

COMMUNITY INVOLVEMENT IN REMEDY SELECTION PROCESS

There is general agreement that the current process for involving communities in the decisionmaking process does little to speed up Superfund cleanups, and that it often makes people feel alienated and powerless regarding their community's future. In some cases, it has led communities to take legal action to halt the cleanup.

The importance of community participation was recognized after CERCLA had been in existence for only 5 years, and as a result section 117 was added by SARA. However, section 117 only requires that a site's remedial action plan be made available to the public, that the public have an opportunity to make comments on the plan and any changes to it, and that EPA answer those comments and explain any significant differences in the final plan. To assist the community in interpreting and commenting on the plan, technical assistance grants (TAGs) were authorized (see box on the following page). But although section 117 provided the public some access, for the most part it has not engendered active involvement of a community in the decision making process.

Industry witnesses testified to the importance of having the local populace involved. A manager of Dupont who spoke on behalf of the Chemical Manufacturers Association (CMA) said, "The experience of CMA's member companies is that when the local community has meaningful input in the remedy selection process, the result is better decisions and faster cleanups." An official of the second largest waste management company in the U.S. testified that better and more efficient cleanups resulted from active and early consultation with the local community:

At BFI [Browning Ferris Industries], as a matter of policy, we actively involve communities in virtually all of our activities, whether involving Superfund sites or the siting of new landfills. The absence of an involved and informed community makes for more expensive, more contentious, and more time-consuming projects, in our view.[50]

The Technical Assistance Grants (TAG) Program

To ensure that communities affected by Superfund sites are adequately involved in the decision-making process, Section 117 of SARA added the Technical Assistance Grants (TAG) program. Up to $50,000 may be provided to a community "to obtain technical assistance in interpreting information with regard to the nature of the hazard, remedial investigation and feasibility study, record of decision, remedial design, selection and construction of remedial action, operation and maintenance, or removal action at such facility." Recipients of grants are required to contribute 20 percent of the total cost of assistance for which the grant is made, though this may be waived in cases of financial hardship. The TAG program has been criticized as being less successful than originally hoped. Some community groups have recommended that Technical Assistance Grants be granted before a site is listed on the NPL. One such group, the Concerned Citizens of Triumph (Triumph, Idaho) has actively opposed the listing of a mill tailings site located in their community to the NPL (without benefit of a TAG grant). Environmental community groups such as North Baton Rouge Environmental Association and the Communities at Risk Network have proposed other reforms to the TAG program such as: simplification of the application process; elimination of the matching funds requirement; and removal of the three year restriction.

The same point was made by a Federal official, as well. Thomas P. Grumbly, Assistant Secretary for Environmental Management, Department of Energy testified:

> Superfund should be reformed to incorporate community involvement earlier in the remedy selection process. We have often been criticized for not adequately addressing local circumstances when we evaluate the risks associated with a site or determining the method or level of cleanup. For too long community groups have felt shut out of the process of site remediation decisionmaking, discussions of future land use options, and the risk evaluation process. Community involvement should be an integral part of the remedy selection process

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[50] Philip Angell, vice president, Browning Ferris Industries. U.S. Senate. Committee on Environment and Public Works. *Superfund Reform Act of 1994*. S. Hrg. 103-559. Washington, U.S. Govt. Print. Off., 1994. p. 249

that will, in the long run, make the risk assessment and management process more open, and more democratic.[51]

To facilitate community involvement in the remedy selection process at DOE, the Department has created an Office of Public Accountability in its Environmental Management Program. It is monitoring progress in increasing stakeholders' trust and confidence levels, and improvement has been indicated.

EPA has awarded TAG grants to 165 communities (about 13 percent) of the communities located adjacent to Superfund sites. The U.S. General Accounting Office (GAO) has found that EPA's limited emphasis on TAG program outreach efforts at headquarters and regional levels has contributed to low participation in the program.

Without significant community support, a hazardous waste cleanup project faces potential problems such as remedy selection challenges, delays, public displays of opposition, citizen suits. A House Public Works Committee report from the last Congress found that constructive and early community involvement in the remedy selection process improves the likelihood that a successful as well as cost-effective solution will be attained.[52]

The House draft bill would require consultation on cleanup decisions with Community Assistance Groups (CAGs - newly established by the bill), but states that CAG decisions are not binding. The TAG program is continued, and grants may exceed the current $50,000 limit if warranted by the complexity of the site; the needs, size, and diversity of the population; and the ability of the community to raise funds from other sources. The bill requires that information presented to the community be "unbiased and informative;" that it explain significant assumptions and value judgments used; and, among other things, that it compare site risks to other risks that are familiar and routinely encountered by the general public.[53]

S. 1285 authorizes the newly established Community Response Organizations to serve as an information conduit to EPA, the States, and PRPs. TAGs are made renewable for up to $100,000 total, doubling the current limit of $50,000; no matching funds from the community are required.

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[51] T. Grumbly testimony.

[52] U.S. Congress. House. Committee on Public Works and Transportation, Subcommittee on Investigations and Oversight. *Administration of the Superfund Program*. House Report No. 103-35, 103d Congress, 1st Session. Washington, U.S. Govt. Print. Off., 1993. p. 61.

[53] For further discussion, see U.S. Library of Congress. Congressional Research Service. *Risk Analysis and Cost-Benefit Analysis of Environmental Regulations*. CRS Report for Congress 94-961 ENR, by Linda-Jo Schierow. Washington, 1994. 55 p.

CONCLUSION

This report has outlined cleanup standards issues, presented at congressional hearings during 1995, that are central to the Superfund reauthorization debate. The viewpoints presented in this report are those most frequently delivered on the subject of cleanup standards and remedy selection.

Proposed reforms such as repealing the requirement to meet "relevant and appropriate" requirements, or ensuring that risk assessment plays a larger role in the remedy selection process confront formidable questions: What should be the goal of the Superfund program? Should sites be cleaned for environmental cleanliness' sake (as some ARARs do) or should sites be cleaned for protection of human health? The distinction between the two is significant -- the former takes a more expansive approach to environmental protection, while the latter takes one that may better accommodate economic considerations. If the goal should be protection of human health, how protective and complete should the cleanup be? And who decides? If the goal is to achieve a certain level of cleanliness, should national standards be established to define the level of cleanliness required? Though there is little consensus on the answers, most involved in Superfund seek to alleviate the confusion over the program. To lessen this confusion, Congress is attempting to further define Superfund's cleanup goals and the methods used to attain these goals. crsphpgw