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United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-271694

April 15, 1996

The Honorable Christopher S. Bond
Chairman, Committee on Small Business
United States Senate

Dear Mr. Chairman:

Almost 16 years after the creation of the Superfund program, the Congress continues to be concerned about the pace and cost of cleanups at hazardous waste sites. In response to these concerns, the Environmental Protection Agency (EPA) has begun over the past few years to use its emergency response authority, known as removal authority, to devote more effort to cleanup and less to planning. Although removal authority is generally used to respond to emergency or time-critical situations, EPA can also use removal authority to conduct substantial nonemergency actions known as non-time-critical (NTC) removals.[1] Compared to the traditional remedial process, the NTC removal process considerably shortens the planning steps (the study and design steps) but conducts similar cleanup actions. While still relying on the remedial process as the appropriate one for planning very complex actions such as restoring groundwater, EPA has used NTC removals to expedite the cleanup of portions of Superfund sites, particularly those portions posing a high risk to human health or the environment.

Because of the Congress's interest in more cost-effective cleanups, you asked us to (1) review the benefits and disadvantages of NTC removals, (2) determine the potential use of NTC removals in Superfund cleanups, and (3) provide information on the factors that constrain using NTC removals for more cleanups. Because you need immediate information for the appropriations

[1]NTC removals are one major component of EPA's Superfund Accelerated Cleanup Model, an initiative the agency began in 1992 to expedite site cleanups and reduce cleanup costs. The model also includes other initiatives, such as using presumptive remedies in site cleanups and identifying responsible parties earlier.

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process, we are presenting preliminary findings at this time. We will present our final results and recommendations later this year.

In summary, our preliminary work shows that using NTC removals at portions of Superfund sites can save time and money and expedite the protection of human health and the environment. On average, EPA site managers estimate that by using the NTC removal process instead of the remedial process, similar cleanup actions can be completed about 2 years earlier and cost about half a million dollars less. These time and cost savings are primarily attributed to the streamlined planning steps followed under the NTC removal process. Because NTC removals are accelerated, they reduce the risks to human health and the environment sooner by more quickly cleaning up hazardous wastes and preventing the further spread of contaminants. NTC removals also have potential disadvantages, however, such as the increased amount of time EPA staff must spend overseeing cleanup contracts. Furthermore, using NTC removals could shift some costs from the states to EPA. By law, federally funded remedial cleanups cannot proceed unless states agree to pay 10 percent of site cleanup costs and to conduct the follow-on operations and maintenance (O&M) of remedial actions. These requirements for state participation do not apply to NTC removals.[2]

From EPA's experience to date, NTC removals demonstrate high potential as a useful tool to clean up portions of most of the approximately 3,000 sites in EPA's inventory of current and expected Superfund sites. NTC removals have been used at the high-risk portions of many different types of sites, such as landfills, manufacturing facilities, and mining sites, and for all environmental media, including soil, groundwater, and surface water. NTC removals have employed many of the same kinds of permanent cleanup actions used in the remedial program, such as treating or extracting contaminants. Although NTC removals are appropriate for cleaning up portions of Superfund sites, these sites may also require very complex actions that are more appropriately conducted under the remedial process because of the additional time it devotes to planning.

Although NTC removals show promise for expediting Superfund cleanups, budgetary and legal issues have constrained their wider use. EPA's overall spending for removals, while increasing, has ranged from only 9 to 17 percent

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[2]EPA's removal guidance advises regional staff to seek such state participation, however. Some states have voluntarily shared the cleanup costs for NTC removals and conducted follow-on operations and maintenance.

of all Superfund spending, and has gone first to cover the hundreds of emergency removals EPA conducts each year. Also, because EPA headquarters must account for removal and remedial funds separately, regions are not permitted to move funds between these two budgets to pay for more NTC removals. Finally, statutory limits on the duration and cost of removals have discouraged the wider use of NTC removals. However, proposed legislation to reauthorize Superfund, S. 1285 and H.R. 2500, includes provisions that will help ease these constraints.

The enclosure to this letter includes the preliminary results of our work, as presented in a briefing to your office.

SCOPE AND METHODOLOGY

To determine the benefits and disadvantages of NTC removals, we analyzed data from a survey EPA conducted on the universe of 81 such removals that had started as of March 1995 (including 40 NTC removals that had progressed beyond the study phase). We also interviewed cleanup program managers and staff from six EPA regions that represented a cross-section of experience in using NTC removals. In addition, we interviewed EPA headquarters removal branch chiefs, legal staff from EPA's Office of General Counsel, state hazardous waste program officials, environmental advocacy groups, and representatives from private parties who had participated in NTC removals.

To determine the potential use of NTC removals in future cleanups, we analyzed data from EPA's March 1995 survey to determine the types of sites, media, and cleanup actions that have been included in NTC removals to date. In our interviews with the officials listed above, we asked them to discuss the similarities between NTC removal sites and the approximately 3,000 sites in EPA's inventory of current and expected Superfund sites. (This inventory includes sites listed on the National Priorities List (NPL), EPA's list of the nation's worst hazardous waste sites, and sites that are not on this list but have NPL-caliber contamination.)

To gather information on the factors constraining the use of NTC removals for more cleanups, we relied on our interviews with regional program cleanup staff and managers, EPA headquarters removal branch chiefs, and legal staff from EPA's Office of General Counsel.

We performed our work from September 1995 through March 1996 in accordance with generally accepted government auditing standards. We did not verify the accuracy of the data EPA collected in its March 1995 survey.

AGENCY COMMENTS

EPA managers and staff in the Office of Emergency and Remedial Response (the office responsible for both Superfund removal and remedial cleanups) commented on a draft of this report and agreed with the facts presented. The officials asked, however, that we provide more context in presenting the NTC removal initiative. In particular, the officials pointed out that NTC removals are one major component of the agency's Superfund Accelerated Cleanup Model, which also includes initiatives such as using presumptive cleanup remedies and identifying responsible private parties earlier. Furthermore, the officials asked us to emphasize that while NTC removal actions are useful for addressing portions of many Superfund sites, these sites may also require highly complex actions that are more appropriately addressed under the full remedial process. Finally, the officials pointed out that EPA's survey used to develop cost and time savings from NTC removals represents the "best professional judgment" of EPA site managers. We revised the report to incorporate these comments.

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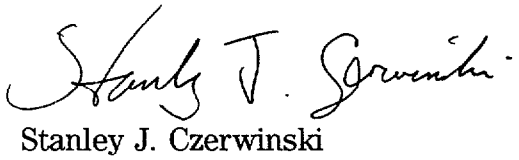
As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 10 days after the date of this letter. At that time, we will send copies to the Administrator of EPA. We will also make copies available to others on request.

Please call me at (202) 512-6520 if you or your staff have any questions about this report. Major contributors to this report were Charles W. Bausell, Fran A. Featherston, Angelia V. Kelly, Eileen R. Larence, and Patricia J. Manthe.

Sincerely yours,



Stanley J. Czerwinski
Associate Director, Environmental
Protection Issues

Enclosure

ENCLOSURE I

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Objectives -- Address the Following Questions:

- What are the benefits and disadvantages of non-time-critical (NTC) removals?
- Can NTC removals be used to clean up many Superfund sites?
- What factors constrain using NTC removals for more cleanups?

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We Found That NTC Removals:

- Can save time and money (2 years and $500,000 per action) and protect health and the environment. However, they require more EPA oversight.
- Can be a useful cleanup tool at many sites, especially for high-risk portions, but are not suitable for very complex actions.
- Are affected by budgetary and legal issues that constrain their wider use.

Note: Data on time and cost savings represent EPA site managers' estimates based on their experience with NTC removals as of March 1995.

GAO Background: NTC Removals as an Alternative to the Remedial Process

- In 1992, EPA expanded its use of NTC removals. Unlike emergency or time-critical removals, NTC removals allow substantial planning time.
- About 80 NTC removals had been started as of 1995. Most removals (3000 to date) are emergency or time-critical.
- NTC removals can be an alternative to remedial actions when site conditions do not require extensive study.

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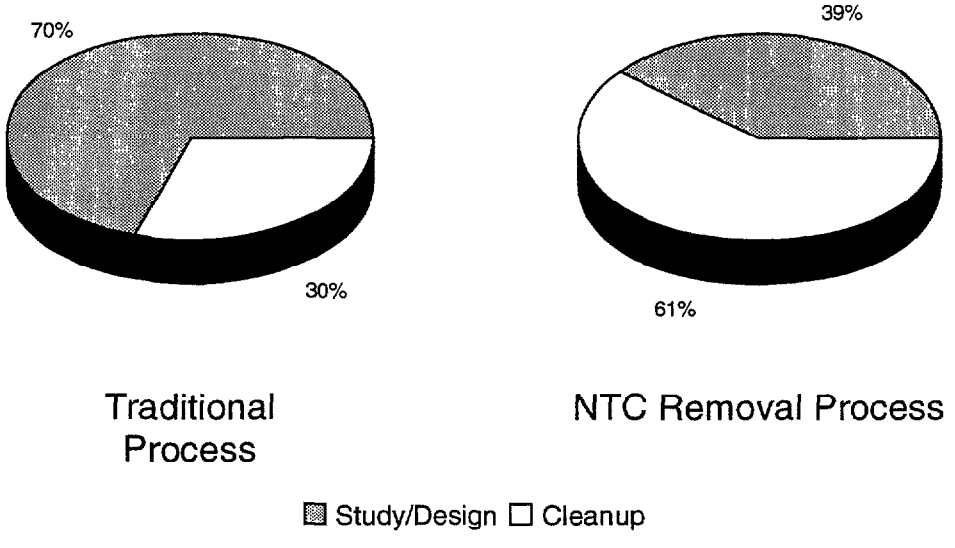
Major Benefit: NTC Removals Speed Cleanups but Preserve Key Steps

- NTC removals accomplish cleanup actions faster than the remedial process--by about 2 years on average.
- Streamlining occurs in study/design steps--actual cleanup is not diminished.
- Study/design provides sufficient basis to plan the cleanup, according to EPA.
- NTC removals allow for public comment and state and industry participation.

GAO NTC Removals Spend Much Smaller Proportion of Time in Study/Design

Percent of Time Spent in Study/Design & Cleanup



Note: Based on average completion time.
Sources: EPA's CERCLIS data as of 9/95 and survey of NTC removals to 3/95.

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Related Benefits: NTC Actions Save Money and Protect the Environment

- NTC removals reduce cleanup costs. The average total cost of an NTC removal is about $3.6 million--more than $500,000 less than a similar action under the remedial process.
- By accelerating cleanup, NTC removals are quicker in reducing health risks and preventing contamination from spreading further in the environment.

Notes: EPA's 1995 survey catalogued cost savings in two stages--savings resulting from the NTC study alone and savings resulting from the entire NTC removal process. Cost savings from the study alone were available for 54 NTC removals and averaged about $200,000. Cost savings from the entire process were available for 16 NTC removals and averaged more than $500,000.

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For Example:

- At a Kansas City, Missouri, site, the site manager estimated the NTC removal reduced cleanup costs by about 20% (over $500,000). Contamination of the Blue River was prevented.
- At a Cedar Rapids, Iowa, site, a private company estimated the NTC removal reduced cleanup costs by at least half (over $2 million). Deep groundwater contamination was prevented.

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Opinions Vary About Potential Disadvantages of NTC Removals

- NTC contracts require more oversight by EPA but offer greater control of the cleanup work.
- The legal process for privately funded cleanups is streamlined, but EPA is concerned about its recourse if a private party defaults.
- For remedials, states must pay 10% and do O&M, but not for NTC actions. Some states have volunteered this support.

ENCLOSURE I

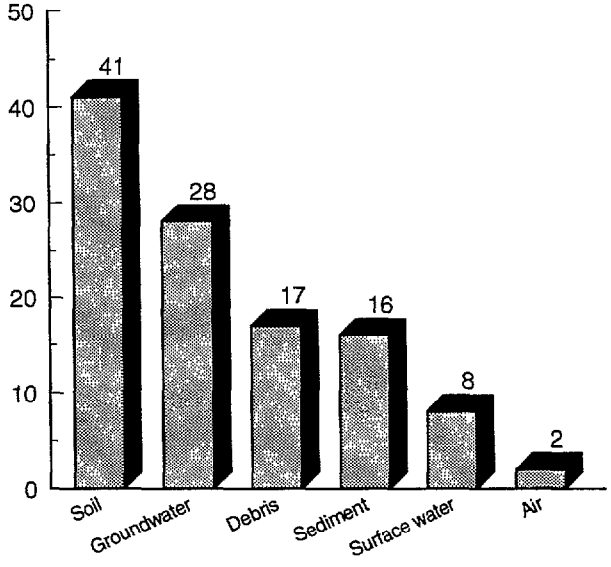
GAO NTC Removals Can Be Used at Many Sites

- NTC removals can be used for various types of sites, media, and remedies.
- According to EPA, NTC removals can often address portions of Superfund sites, especially high-risk portions. (About 1,000 NPL sites and about 2,000 NPL-caliber sites await cleanup.)
- However, NTC removals are inappropriate for very complex actions, such as long-term groundwater cleanup.

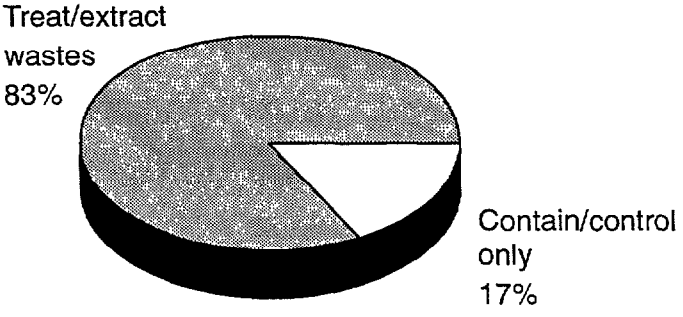
GAO NTC Removals Have Been Used for:

Various Media

Number of NTC removals



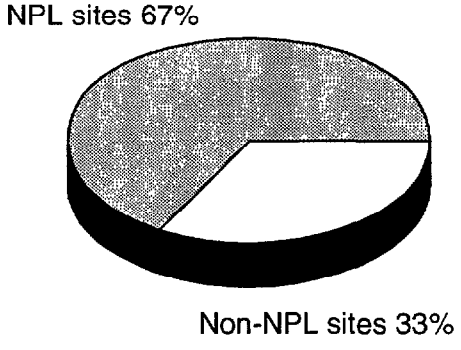
And Usually Include a Permanent Remedy



Notes: Charts show data for the 58 NTC removals where remedies have been selected. NTC removals may address more than one type of media.
Source: EPA's survey of NTC removals to 3/95.

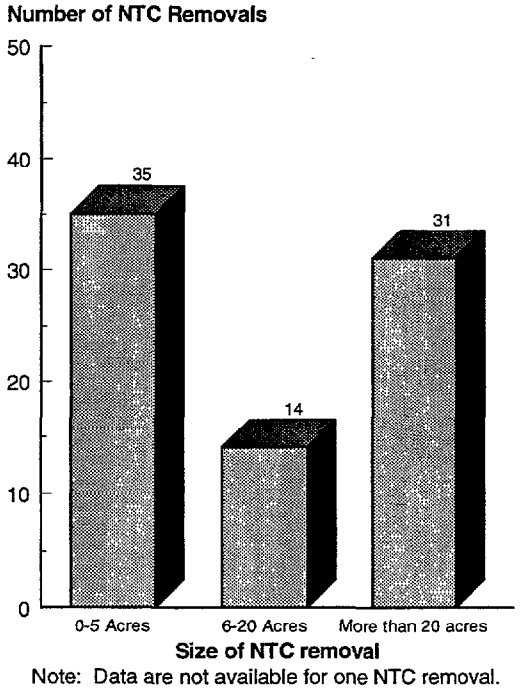
GAO NTC Removals Have Also Been Used for:

Both NPL and Non-NPL Sites



Note: Chart shows data for 81 NTC removals.
Source: EPA's survey of NTC removals to 3/95.

And Small to Large Areas

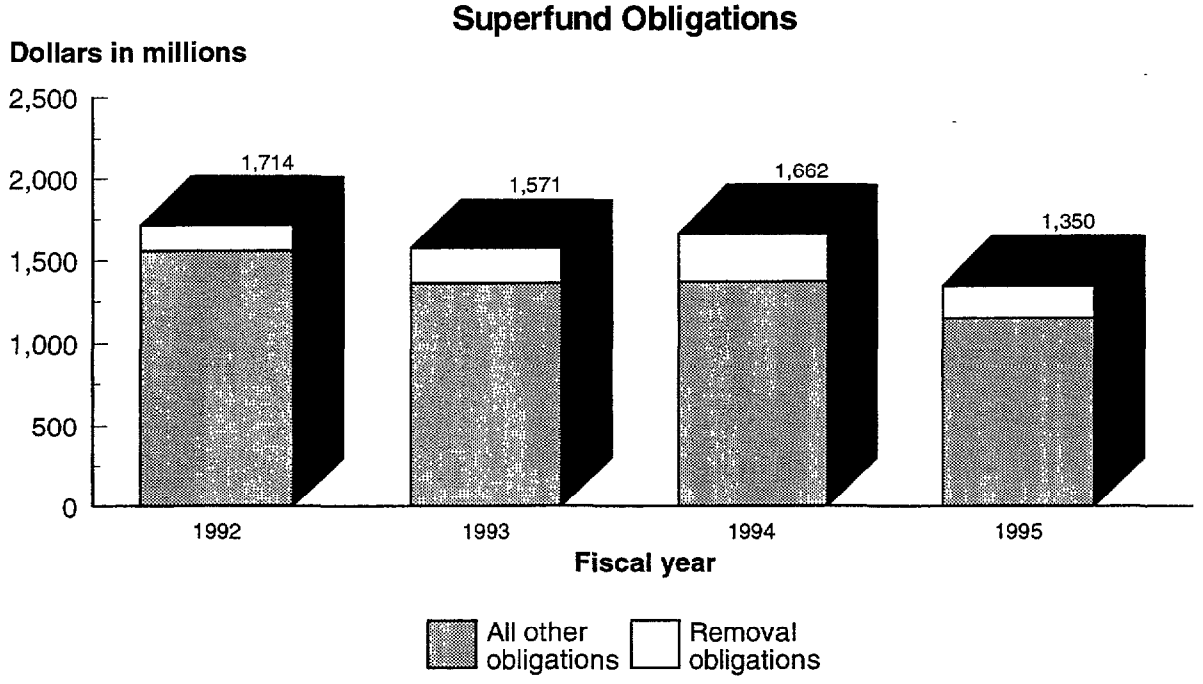


Note: Data are not available for one NTC removal.

GAO Factors Constraining NTC Removals: EPA Budgetary Issues

- NTC removals constitute a small portion of EPA's Superfund obligations.
- An EPA region's removal budget must fund emergency, time-critical, and NTC removals. NTCs receive lowest priority.
- Because EPA headquarters must account for removal and remedial spending separately, regions are not permitted to move money between their remedial and removal budgets.

GAO Total Removal Obligations Average 14 Percent of Superfund Obligations



Notes: Most removal obligations are devoted to time-critical and emergency actions. Other obligations include funding for the remedial program, the enforcement program, administrative costs, and other costs. Dollar figures are not adjusted for inflation.
Source: EPA Budget Office.

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Factors Constraining NTC Removals: Legal Requirements on Time and Cost

- By law, NTC removals exceeding 12 months or $2 million require waivers to receive EPA funding. (EPA also considers these limits in approving privately funded NTC removals.)
- For waivers, EPA must show that the NTC removal "is consistent with the remedial action to be taken." Regions' varying interpretation of this requirement has limited NTC removals.

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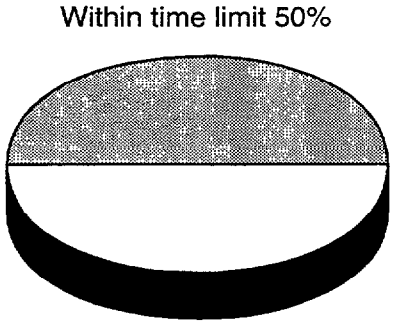
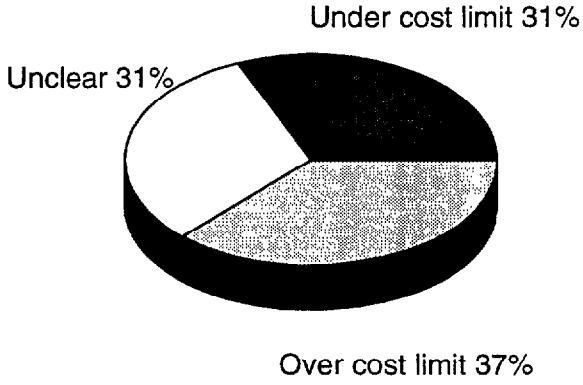
NTC Removals Often Exceed Time and Cost Limits

Duration of 38 NTC Removals
(Removals over 12 months require waiver)



Note: By law, time and cost limits only apply to federally financed actions. However, EPA considers these limits in approving privately funded actions.

Cost of 35 NTC Removals
(Removals over $2 million require waiver)



Notes: EPA aggregated actions costing $1-3 million, so it is unclear how many actions in that interval are over/under $2 million. Percentages do not add to 100% because of rounding.
Source: EPA's survey of NTC removals to 3/95.

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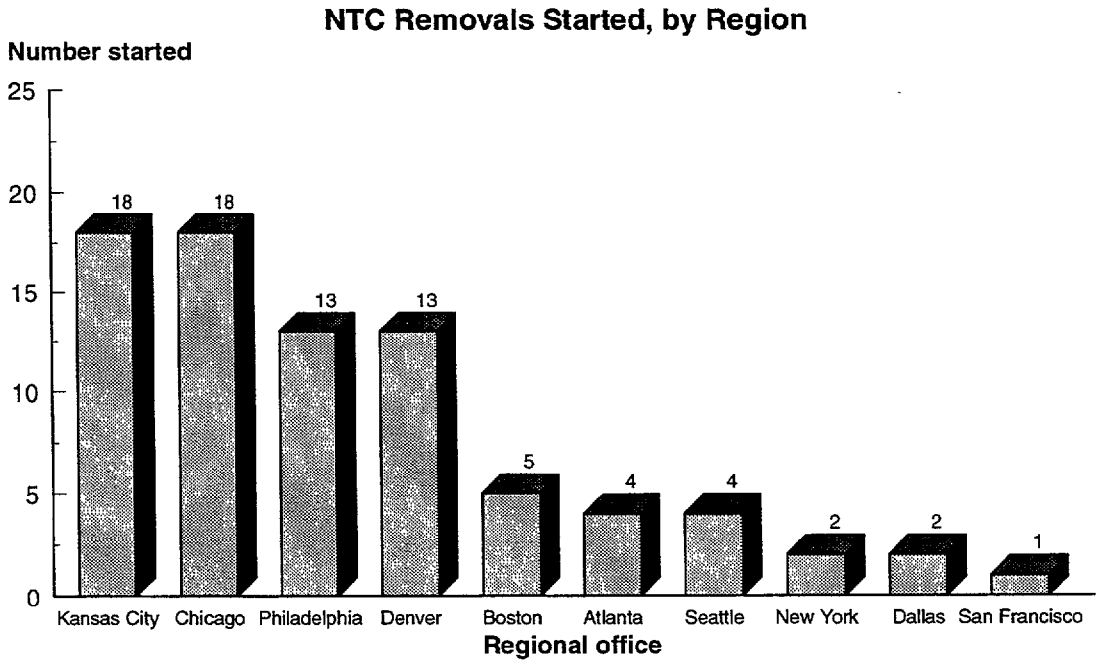
Varying Interpretation of Law Limits NTC Removals in Some Regions



Note: Chart shows data for 80 NTC removals because data are not available for one site.
Source: EPA's survey of NTC removals to 3/95.

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