

June 1993

SUPERFUND

EPA Action Could Have Minimized Program Management Costs



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

**Resources, Community, and
Economic Development Division**

B-252759

June 7, 1993

Congressional Requesters

This report responds to your requests for an assessment of (1) the extent of and reasons for high Superfund program management costs and the Environmental Protection Agency's (EPA) initiatives to reduce these costs on current Alternative Remedial Contracting Strategy contracts and (2) EPA's plans to control program management costs on the new cleanup contracts it is preparing to procure. This report contains several recommendations to the EPA Administrator for controlling program management and other contracting costs.

Unless you publicly release its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies of this report to the appropriate congressional committees; the Administrator, EPA; and the Director, Office of Management and Budget. We will also make copies available to others upon request.

This work was performed under the direction of Richard L. Hembra, Director, Environmental Protection Issues, who can be reached on (202) 512-6111 if you or your staff have any questions. Major contributors to this report are listed in appendix I.

A handwritten signature in cursive script, appearing to read 'J. Dexter Peach'.

J. Dexter Peach
Assistant Comptroller General

B-252759

List of Requesters

The Honorable Frank R. Lautenberg
Chairman, Subcommittee on Superfund,
Recycling, and Solid Waste Management
Committee on Environment and Public
Works
United States Senate

The Honorable David Pryor
Chairman, Subcommittee on Federal
Services, Post Office and
Civil Service
Committee on Governmental Affairs
United States Senate

The Honorable John D. Dingell
Chairman, Subcommittee on Oversight
and Investigations
Committee on Energy and Commerce
House of Representatives

Executive Summary

Purpose

Critics have raised concerns about Superfund contractors' spending excessive amounts of public funds on activities that do not advance the cleanup of hazardous waste sites. These concerns have focused on the Alternative Remedial Contracting Strategy (ARCS) contractors' incurring high administrative and management costs.

As a result of these criticisms, several Subcommittee Chairmen requested that GAO assess (1) the extent of and reasons for high Superfund program management costs and the Environmental Protection Agency's (EPA) initiatives to reduce these costs and (2) EPA's plans to control program management costs for the new Superfund cleanup contracts.

Background

The Superfund program was created in 1980 to clean up the nation's most dangerous hazardous waste sites. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 created a trust fund (Superfund), financed primarily through taxes on crude oil and chemicals, to pay for site cleanups. The Congress reauthorized Superfund in 1986, and in October 1990 increased its authorization to a total of \$15.2 billion.

EPA uses private ARCS contractors extensively to perform or oversee the cleanup of Superfund hazardous waste sites. These contractors perform remedial studies, design cleanup remedies, and manage the cleanup under ARCS contracts. Actual site cleanups can be performed by other private contractors or by the U.S. Army Corps of Engineers.

Under EPA's previous contracting strategy, contracts were awarded only to five relatively large contractors. To increase the level of competition and to encourage smaller firms to participate, in 1988 and 1989 EPA awarded a total of 45 ARCS contracts to 23 contractors, each for a period of 10 years. The total cost of the 45 contracts, if all options are exercised, is \$6.6 billion. This includes \$2.4 billion for ARCS contractors' cleanup design and oversight and \$4.2 billion for subcontractors' actual cleanups.

The work performed under ARCS contracts is divided into two elements—program management and remedial planning. EPA incorporated the program management concept into ARCS contracts as a means of providing oversight for non-site-specific costs. Costs that support multiple sites are also charged to program management. Costs incurred for a specific site are charged to remedial planning. Program management costs include, among other things, the salary of contract managers, the cost of

reporting and billing, and the cost of purchasing equipment used at multiple sites.

Results in Brief

Lack of EPA action has contributed to high ARCS program management costs. As of September 1992, ARCS contractors had incurred \$465 million in costs, of which one quarter (\$105 million) was for program management. The percentage of costs expended for program management ranged from almost 70 percent in fiscal year 1988 to 15 percent in fiscal year 1992. These high costs resulted in part because EPA awarded a large number of contracts and built in excess contract work load capacity to allow EPA to terminate contractors that performed poorly and to prevent future capacity shortages. However, the cleanup work load EPA anticipated never materialized, in part because of changes in EPA policy, including a decision to have private parties responsible for site contamination manage and pay for cleanups. Also, EPA delayed before terminating one contractor in October 1991 and effecting other contracting changes to avoid additional costs to the government. Subsequent increases in cleanup work load and recent EPA initiatives to control program management costs have eased work load overcapacity to some degree, but the problem persists in some regions, and EPA has yet to determine whether further terminations are warranted.

EPA is currently developing new contracts to replace ARCS contracts as they expire and is, once again, also considering policy changes that could affect the volume and type of work available to Superfund contractors. EPA staff are aware that these policy changes and Superfund's upcoming reauthorization could affect the cleanup work load and thus are attempting to incorporate enough flexibility into the new contracts to allow for sufficient contract capacity and to minimize future program management costs. EPA's ability to respond to program changes as they occur, and, if needed, coordinate prompt and appropriate actions, could help minimize future program management costs.

Principal Findings

High Program Management Costs

ARCS program management costs have far exceeded EPA's projections. EPA expected that, with the full use of the contracts, program management costs would constitute about 11 percent of the ARCS costs at the end of the

10-year contract period. However, halfway through the life of these contracts, these costs accounted for 23 percent of contract costs, making it unlikely that EPA will be able to achieve its target percentage. EPA anticipated that program management costs would represent a higher proportion of contractors' costs in the early years of the contracts—because of start-up costs the ARCS contractors were expected to incur—and would then diminish in the latter years of the contracts as the remedial work load increased. Although the yearly percentage of these costs has declined—from 69 percent in fiscal year 1988 to 15 percent in fiscal year 1992—program management costs have been much greater than anticipated, primarily because the anticipated work load never materialized or went to others.

The high ARCS program management costs can be attributed to a number of factors. First, in awarding the contracts, EPA built in excess contract capacity and increased the number of contractors involved from 5 to 45 to avoid future capacity shortages and to allow for the termination of poor performers. Second, EPA made several key policy decisions—such as implementing a new enforcement-first policy that compels parties responsible for site contamination to manage and pay for cleanups—that effectively reduced the amount of work available for ARCS contractors. Finally, although EPA was aware of high ARCS program management costs as early as October 1989, it did not initiate action to correct the problem, such as terminating contractors as originally planned, until the beginning of fiscal year 1992.

Although EPA's actions have lowered the percentage of program management costs, they have not entirely resolved the problem. In some regions, significant excess contract capacity remains that, if left unresolved, may ultimately cost the government millions of dollars in unnecessary program management costs. Moreover, nearly one of every five ARCS contracts continues to charge program management costs in excess of 20 percent of total contract costs. In regions that still have excess contract capacity, terminating one or more contracts could reduce program management costs by millions of dollars over the remaining life of the ARCS contracts.

EPA's New Cleanup Contracts Are More Flexible

EPA is currently developing new cleanup contracts, known as Response Action Contracts (RACS), that will supplement and eventually replace the ARCS contracts as they expire. The regions will begin to run out of ARCS capacity in 1994, according to EPA. EPA has prepared work load forecasts to

estimate contracting needs, ensure the continuity of cleanup work upon the expiration of the ARCS contracts, and help control program management costs.

EPA is designing the new RACS contracts with features to particularly address key deficiencies of the ARCS contracts—features to help avoid excess capacity and high program management costs. For example, EPA plans to reduce the overall number of contractors and the contracts' duration. EPA will also be able to adjust the RACS design as needed for future procurements. Finally, detailed cost breakdowns and a new award fee process should make it easier for EPA to monitor and control costs.

Major policy initiatives now being developed at EPA, such as the Superfund Accelerated Cleanup Model (SACM) to help expedite cleanups, and Superfund's upcoming reauthorization may affect RACS' contracting needs. To avoid the types of problems that have occurred under previous cleanup contracts, EPA will need contracts flexible enough to avoid excessive costs under a variety of possible scenarios. The ultimate usefulness of the flexibility built into RACS contracts depends, however, on EPA's ability to utilize these features wisely and decisively in response to changing contracting needs and to coordinate the development and implementation of SACM.

Recommendations

To minimize program management costs, GAO recommends that EPA analyze ARCS contracts to determine whether terminating some contracts would be more cost-effective than continuing to pay program management costs for the remaining life of underutilized contracts. GAO also recommends that EPA coordinate the development and implementation of SACM and other policy initiatives, as well as major program changes that may occur during Superfund's reauthorization, and modify the RACS contract design as needed to avoid unnecessary government costs once these contracts become effective.

Agency Comments

GAO discussed this report with program officials from EPA's Offices of Solid Waste and Emergency Response and Administration and Resource Management and incorporated their comments where appropriate. These officials generally agreed that the facts presented in this report are correct, but not all officials agreed that terminations are warranted. We believe that until EPA performs a cost-effectiveness analysis, it does not have an adequate basis for excluding the financial merits of contract terminations.

As agreed, GAO did not obtain written EPA comments on a draft of this report.

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Abbreviations

ARCS	Alternative Remedial Contracting Strategy
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DCAA	Defense Contract Audit Agency
EPA	Environmental Protection Agency
FAR	Federal Acquisition Regulation
FIT	Field Investigation Team
FS	feasibility study
GAO	General Accounting Office
HSCD	Hazardous Site Control Division
IG	Inspector General
LOE	level of effort
NPL	National Priorities List
OERR	Office of Emergency and Remedial Response
OGC	Office of General Counsel
OMB	Office of Management and Budget
OSWER	Office of Solid Waste and Emergency Response
RA	remedial action
RACS	Response Action Contracts
RD	remedial design
REM	Remedial Engineering Management
RI	remedial investigation
SACM	Superfund Accelerated Cleanup Model
SARA	Superfund Amendments and Reauthorization Act
TES	Technical Enforcement Support

Introduction

The Environmental Protection Agency (EPA) uses private contractors extensively in performing and overseeing the cleanup of Superfund hazardous waste sites. The private contractors perform remedial studies, design remedies for cleaning up the sites, and manage the construction of cleanup remedies under Alternative Remedial Contracting Strategy (ARCS) contracts.¹ In recent years, critics have contended that contractors have spent significant amounts of money on program management costs, thereby using a disproportionate amount of Superfund money for administrative and management costs instead of site cleanup costs.

The Superfund Program

Superfund is EPA's program to clean up the nation's most dangerous hazardous waste sites. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) created the Superfund program with authorized funding of \$1.6 billion for cleaning up these sites. CERCLA authorizes EPA to compel parties responsible for hazardous waste sites, such as waste generators, waste haulers, and site owners and operators, to clean them up. If responsible parties cannot be found, or are unable or unwilling to perform the cleanup, EPA can clean up the sites itself and seek recovery of costs from the parties. To pay for the EPA cleanups, CERCLA established a trust fund (Superfund) to be financed primarily by a tax on crude oil and certain chemicals, such as arsenic and mercury.

As originally envisioned in CERCLA, Superfund was to be a short-term program to clean up a few hundred of the worst hazardous waste sites. Consequently, EPA decided early in the program to rely heavily on private contractors to perform and/or manage these cleanups since they could serve as a flexible work force capable of meeting changing work load demands and provide expertise not available in the federal work force.

During the process of site discovery and evaluation, EPA found that thousands, not hundreds, of hazardous waste sites existed. In 1986, recognizing the long-term nature of the program, the Congress reauthorized Superfund for an additional 5 years and increased the authorized funding by \$8.5 billion. In October 1990, the Congress extended the Superfund program for an additional 3 years and increased its authorization by \$5.1 billion, bringing the cumulative authorization to \$15.2 billion.

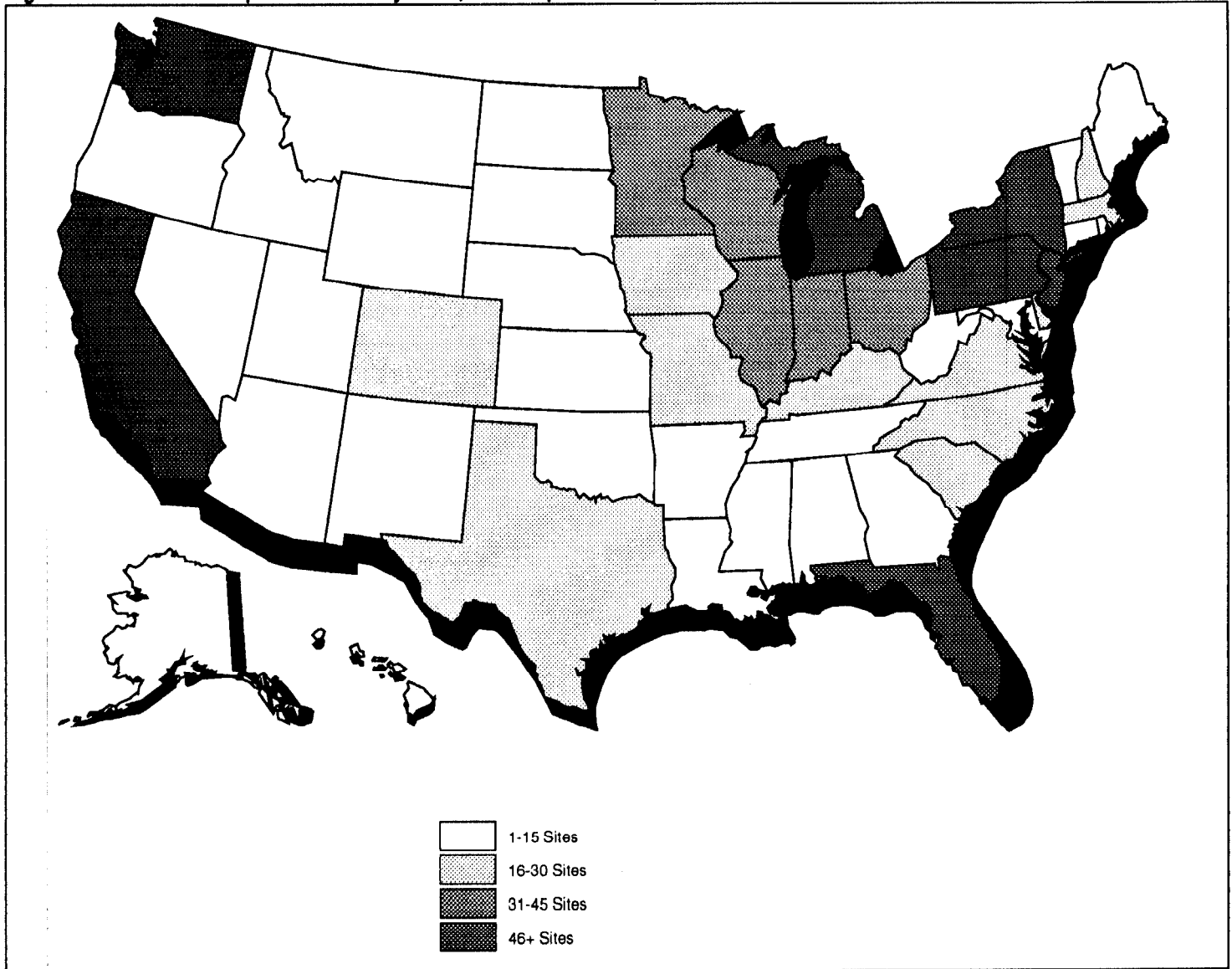
¹EPA introduced ARCS contracts in 1988 to mitigate problems experienced under previous contracts and to improve Superfund project and program management.

Although state and local officials, owners and operators of facilities where hazardous substances have been released, the general public, and EPA have identified 34,000 hazardous waste sites for EPA review, only a small percentage are serious enough to be designated by EPA as Superfund sites; that is, to warrant placement on the National Priorities List (NPL). As of September 30, 1992, 1,275 sites were listed on Superfund's NPL (see fig. 1.1), and EPA had obligated about \$11.4 billion in cleanup activities for these sites. Cleanup work had been completed at 40 of these sites, which have been deleted from the NPL, and construction of the remedy had been completed at an additional 109 sites.² EPA projects the fund's share of the cost of cleaning all these NPL sites to be \$40 billion. Moreover, EPA expects many more sites will be added to Superfund over time. One major 1991 study of total cleanup costs estimated that if Superfund grew to 6,000 sites, cleanup costs for EPA and the private sector, excluding costs for federal facilities and Superfund's administration, could amount to \$300 billion in 1990 dollars over the next 30 years.³

²At sites where construction is considered complete, potential exposure to the waste has been controlled and the remedy has been installed, but operation of the remedy may still be needed for a number of years to achieve cleanup standards. For example, sites with contaminated groundwater may be classified "construction complete" after a groundwater extraction system has been built, although that system may have to operate for an extended period of time to sufficiently remove contaminants from the groundwater.

³Estimation of Resource Requirements For NPL Sites, the University of Tennessee Waste Management Research and Education Institute (Knoxville, Tenn.: Dec. 1991).

Figure 1.1: Number of Superfund Sites by State, as of September 30, 1992



Source: EPA data.

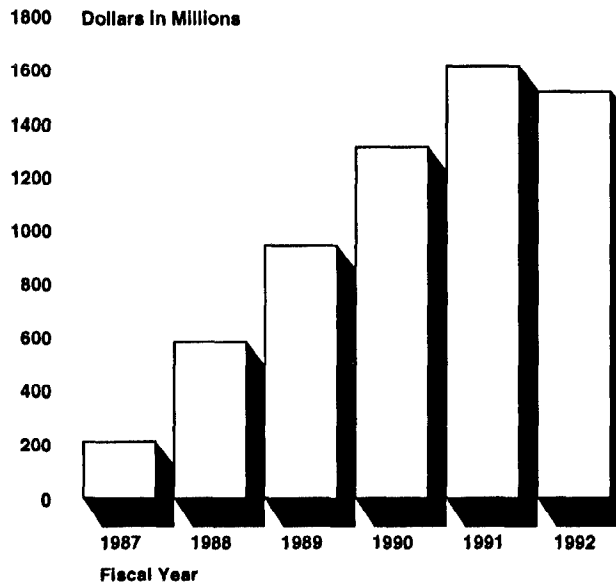
Responsibility for Cleaning Superfund Sites

As amended in 1986, CERCLA strongly emphasizes an enforcement-first approach to cleaning hazardous waste sites. Under this approach, EPA searches for and identifies the parties responsible for the contamination and compels them to clean the site in accordance with remedies approved

by EPA. Although contractors paid for and directed by the responsible parties generally perform the cleanup, EPA uses its own private ARCS contractors to oversee this work.

Since instituting this enforcement-first policy, the annual value of privately financed cleanups has increased dramatically. For example, the annual value of these cleanups rose from \$207.5 million in fiscal year 1987 to more than \$1.5 billion in fiscal year 1992. (See fig. 1.2.) For fiscal year 1992, over 70 percent of the new cleanups were privately financed.

Figure 1.2: Estimated Value of Responsible Parties' Cleanup Work, Fiscal Years 1987-92



Source: GAO analysis of EPA data.

Under the enforcement-first policy, EPA's role is as the provider of last resort. When the parties responsible for the contamination cannot be identified or cannot finance the cleanup, EPA assumes the lead for the cleanup and finances it with Superfund monies. In these instances, EPA uses private ARCS contractors to perform remedial studies, design appropriate remedies, and manage construction of less expensive remedies.

States also play a role in cleaning up some Superfund sites. States are involved in selecting the remedial actions and sometimes assume the lead for cleanup work at sites.

ARCS Contracts

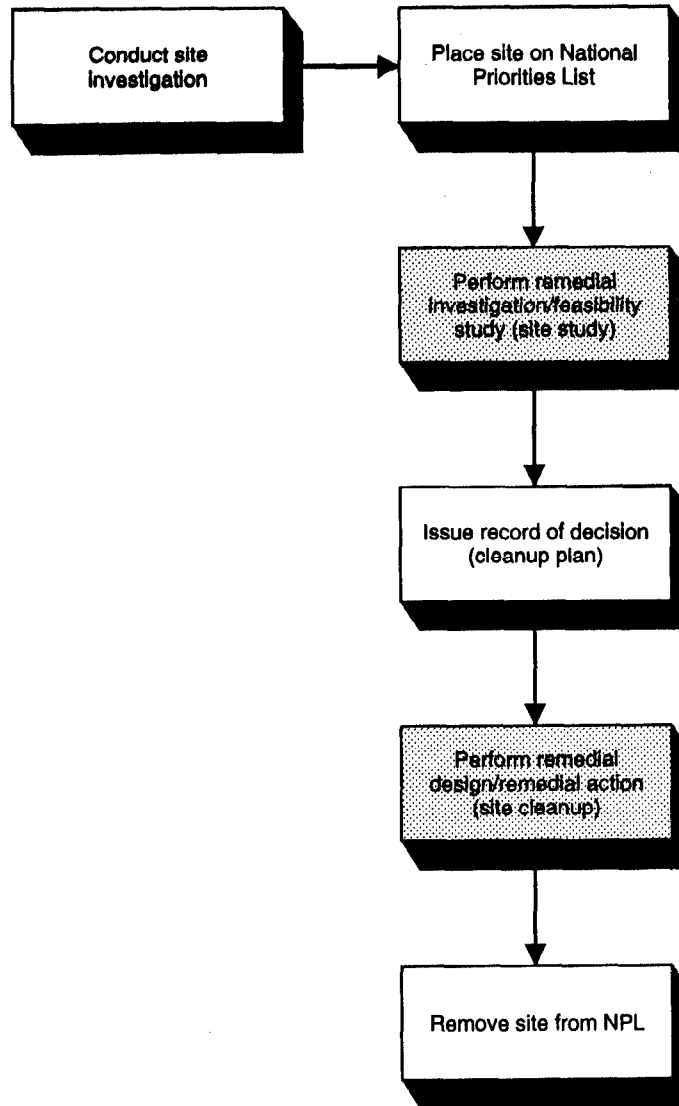
Under the ARCS contracts, EPA employs private contractors to perform all aspects of cleanup work in each EPA region. Prior to ARCS, EPA awarded contracts to five contractors whose involvement in the process was limited primarily to investigating hazardous waste sites and examining cleanup alternatives. The U.S. Army Corps of Engineers was then responsible for designing and constructing the cleanup remedy. However, the transition from EPA's contractor to the Corps often resulted in cleanup delays.

EPA introduced ARCS in 1988 to improve Superfund project and program management. To increase the level of competition under ARCS, to encourage smaller firms to participate, and to regionalize management of these contracts, EPA awarded contracts on a regional basis and allowed contractors to submit proposals for either small or large contracts. To minimize delays caused by the transition from EPA's contractors to the Corps, EPA gave the ARCS contractors responsibility for designing and constructing the remedy for cleanups costing under \$5 million. The ARCS contracts also delegated contract responsibility and authority from EPA headquarters to EPA regions. EPA believed that contract administration would be strengthened by placing responsibility closer to the end user.

EPA awarded 18 ARCS contracts in 1988 and an additional 27 in 1989, for a total of 45 contracts with 23 contractors. Each contract is for 10 years. The total cost of the 45 contracts, if all options are exercised, is \$6.6 billion. This includes \$2.4 billion for ARCS contractor cleanup design and oversight and \$4.2 billion for subcontractors that perform the actual cleanups. As of September 1992, \$465.3 million had been expended on the ARCS contracts.

ARCS contractors perform or manage a variety of cleanup work for EPA. Their work may include in-depth site studies consisting of a remedial investigation (RI) to assess site contamination and estimate the risks posed to the surrounding community and environment. They may also perform a feasibility study (FS) to list and evaluate alternatives for treating or containing the waste. Once cleanup remedies have been selected for the site, ARCS contractors may provide the engineering expertise for the remedial design (RD) and/or oversee the actual cleanup, or remedial action (RA). (See fig. 1.3.)

Figure 1.3: Steps In the Superfund
Remedy Selection Process



Note: Shaded areas denote work that ARCS contractors may perform.

Source: Based on EPA information.

Program Management

The work performed under ARCS contracts is categorized into two activities—program management and remedial planning. EPA introduced the program management category under prior Superfund contracts and,

under the ARCS contracts, separated it from remedial activities as a means of providing oversight for non-site-specific costs. Costs that support multiple sites managed by a contractor are charged to program management; costs that are incurred by a contractor for a specific site are charged to remedial planning.

ARCS program management costs include administrative, management, and technical costs that support remedial work performed by the contractor under the contract but exclude any related remedial costs that are site-specific. Program management costs, for example, would include the salary of contract managers who oversee the work of staff involved in the contract, the cost of reporting and billing, and the cost of purchasing equipment used at multiple sites.

Objectives, Scope, and Methodology

In response to criticism of EPA's management of the ARCS contracts, the Chairmen of the Subcommittee on Superfund, Recycling, and Solid Waste Management, Senate Committee on Environment and Public Works; the Subcommittee on Federal Services, Post Office and Civil Service, Senate Committee on Governmental Affairs; and the Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce, asked us to assess (1) the extent of and reasons for high Superfund program management costs and EPA's initiatives to reduce these costs on current ARCS contracts and (2) EPA's plans to control program management costs on the new Superfund cleanup contracts.

We performed our work at EPA headquarters in Washington, D.C.; in EPA Region I (Boston); and at the locations of 2 of the 23 ARCS contractors—2 of the 7 contractors in region I. We selected Arthur D. Little, Inc., because, at the time of selection, it had the highest ARCS program management costs relative to total costs invoiced within region I. We also selected Metcalf & Eddy, Inc., because it was the most active contractor within region I in terms of total costs invoiced. As of fiscal year 1992, the two contractors were responsible for 36.3 percent of total costs incurred by ARCS contractors in EPA Region I and 4.4 percent of total costs incurred nationally.

To assess the extent of and reasons for high ARCS program management costs, we interviewed EPA headquarters and Region I officials regarding these costs. We obtained and reviewed ARCS cost data from EPA headquarters and Region I, and we used the data to compare costs actually incurred for both program management and remedial planning since the

beginning of the ARCS program. We also reviewed EPA data on contractor work load to assess trends in remedial planning activity. We discussed these data with appropriate contractor personnel.

In response to questions about the appropriateness of other costs charged to ARCS contracts and problematic charges identified in earlier reviews of other ARCS contractors, we examined selected indirect cost accounts for the two contractors we reviewed. We judgmentally selected the accounts and invoices for review because of their potential for containing unallowable or questionable charges. We then reviewed the charges for allowability and reasonableness. We interviewed appropriate contractor officials to obtain clarification of any questionable charges. We were unable to determine the extent to which questionable charges were actually paid by EPA because both contractors bill indirect costs to the government at rates lower than their claimed indirect cost rate. We also reviewed the contractors' accounting policies and procedures and accounting system.

To assess measures incorporated into the upcoming Remedial Action Contracts (RACS) to protect against future high program management costs, we interviewed EPA headquarters officials from the Office of Solid Waste and Emergency Response (OSWER), the Hazardous Site Control Division (HSCD), Design Construction and Management Branch, and Office of Acquisition Management who are responsible for the development and procurement of the new cleanup contracts. We also reviewed the RACS Acquisition Model and other documents pertinent to the RACS procurement and discussed contract-specific details with the section chief in charge of RACS procurement.

This review was conducted between August 1991 and April 1993 in accordance with generally accepted government auditing standards. We discussed this report with program officials from EPA's OSWER and the Office of Administration and Resource Management and incorporated their comments where appropriate. They generally agreed that the facts presented in this report are correct, but not all officials agreed that terminations are warranted. We believe that until EPA performs a cost-effectiveness analysis, it does not have an adequate basis for excluding the financial merits of contract terminations. As requested, however, we did not obtain written comments from EPA on a draft of this report.

Lack of EPA Action Contributed to High ARCS Program Management Costs

Lack of EPA action has contributed to excessive program management costs in the Superfund ARCS cleanup contracts. Nearly halfway through the life of these 10-year contracts, contractors have spent \$105 million, which represents almost one of every four dollars (23 percent), on program management activities. EPA initially estimated, on the basis of full use of the contracts, that program management would total 11 percent of overall ARCS costs. But a number of factors made it unlikely that EPA would ever fully utilize these contracts or be able to achieve its target percentage. First, EPA built excess contract capacity into the ARCS contracts to allow for termination of contractors that performed unsatisfactorily and to prevent any future capacity shortages. Simply put, EPA hired too many contractors for the work they eventually were given to do. Furthermore, the anticipated cleanup work load for ARCS contractors never materialized, in part because of policy changes that EPA did not consider in its original work load estimates. Finally, once aware of the magnitude of the excess capacity and program management problems, EPA did not effect contracting changes, such as termination of some contracts, that might have avoided additional costs to the government.

Of the \$465 million in ARCS costs, nearly \$161 million was for indirect costs—costs that are particularly subject to waste and overcharging. In the past, reviews by EPA's Inspector General (IG) and the Defense Contract Audit Agency (DCAA), as well as our own, have shown that contractors have claimed reimbursement for costs that are not allowable or are questionable under the Federal Acquisition Regulation (FAR). We found instances in which similar unallowable and questionable expenses were being claimed by the two ARCS contractors we reviewed for this report. Our past reviews showed that the primary causes of these claims to the government were contractors' inadequate internal controls and the excessive backlog of audits.

In the past year, EPA has taken a number of actions to improve contract management and to minimize program management costs and wasteful indirect costs, such as strengthening guidance to and oversight of contractors. EPA has also increased the ARCS work load by shifting work from other programs. Although these actions have helped reduce the percentage of program management costs to about 15 percent for fiscal year 1992, we believe that excess contract capacity continues to exist and is causing EPA to pay more in program management costs than is necessary. By terminating underutilized contracts, EPA could reduce by millions of dollars program management costs that will otherwise continue to accrue over the life of these contracts.

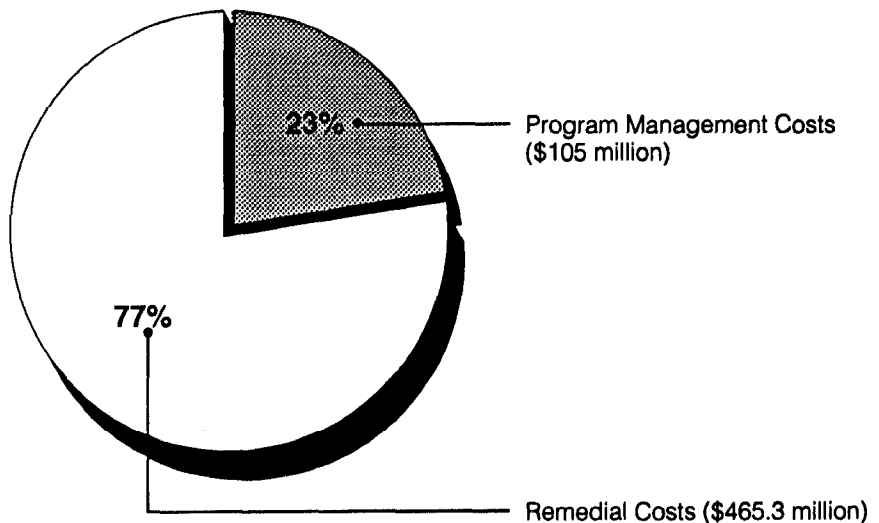
ARCS Program Management Costs Have Far Exceeded EPA's Expectations

In developing ARCS contracts, EPA expected that, with full use of the contracts, program management costs would constitute about 11 percent of the cumulative ARCS costs at the end of the 10-year contract period. EPA anticipated that program management costs would represent a higher proportion of contractors' costs in the early years of the contract—owing to the start-up costs that ARCS contractors were expected to incur—and would then diminish in the latter years of the contracts as the remedial work load increased. Although program management costs have followed this pattern, the proportion of contractor expenditures that these costs represent has greatly exceeded EPA's original expectations.

Program Management Represents 23 Percent of Total ARCS Costs

As shown in figure 2.1, through fiscal year 1992, ARCS contractors had expended \$465.3 million, of which \$105 million (23 percent) had been charged to program management activities.

Figure 2.1: Amount Invoiced by ARCS Contractors Through September 30, 1992

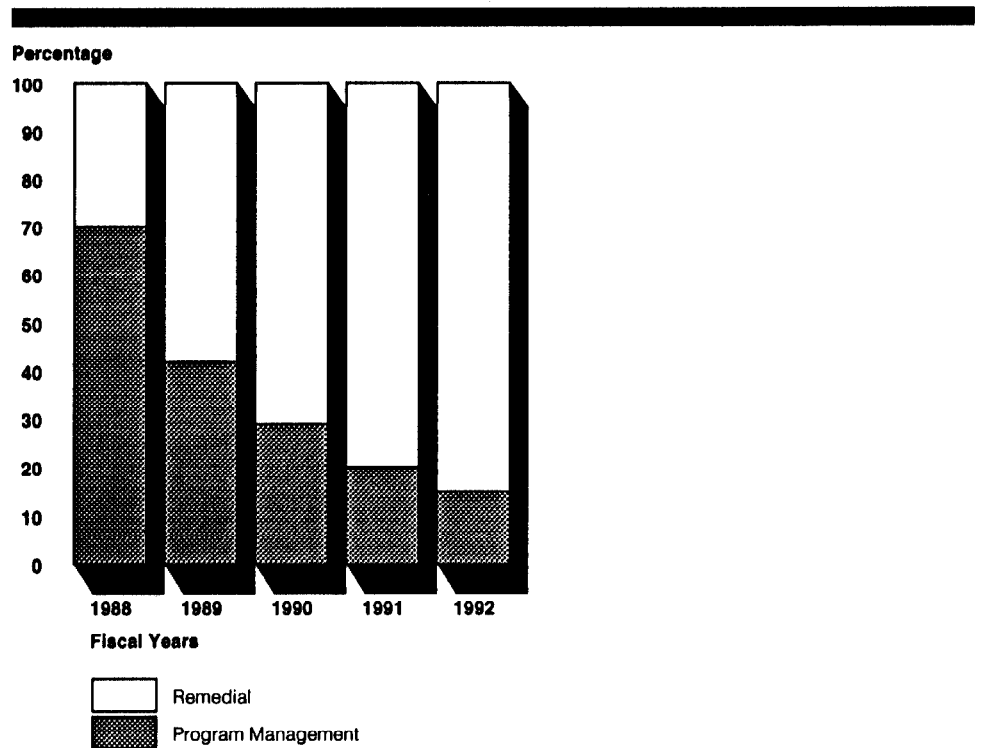


Source: GAO analysis of EPA data.

Chapter 2
Lack of EPA Action Contributed to High
ARCS Program Management Costs

Figure 2.2 shows the percentage of ARCS expenditures that have been invoiced for program management. As the figure indicates, the percentage of ARCS contractor costs spent on program management activities has decreased each year from a high of 69 percent in fiscal year 1988, the first year of these contracts, to a low of 15 percent in fiscal year 1992.

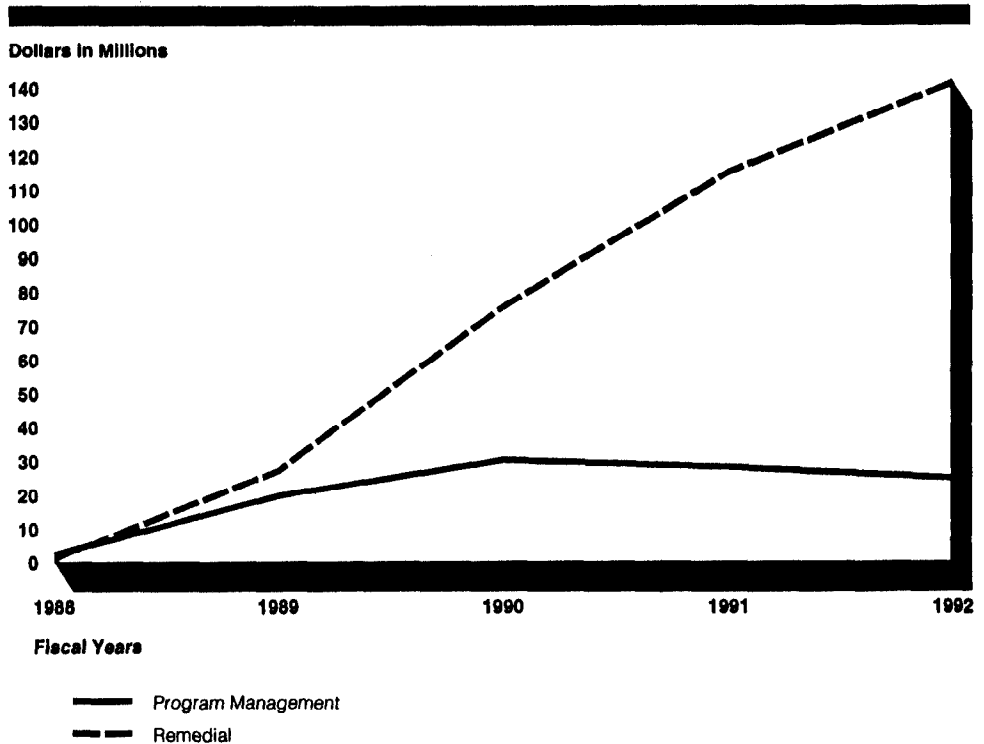
Figure 2.2: Program Management Costs as a Percentage of Total Costs, Fiscal Years 1988-92



Source: GAO analysis of EPA data.

The dramatic decrease in the yearly rate of program management costs can be attributed in part to the increase in remedial work that ARCS contractors have received. Figure 2.3 shows the yearly growth of remedial and program management costs since fiscal year 1988.

Figure 2.3: Comparison of Program Management and Remedial Costs, Fiscal Years 1988-92



Source: GAO analysis of EPA data.

As the figure indicates, from fiscal years 1988 to 1992, the ARCS remedial work load increased dramatically—from \$1 million to \$141 million. During that same period, program management costs also increased, but at a substantially lower rate—from \$2 million to \$25 million.

Low Initial Work Loads Contributed to High Program Management Costs

EPA anticipated that program management costs would be high early in a contract's life because of contractor start-up costs associated with the contract. However, EPA also forecasted that the ratio of program management costs to total costs would then decline rapidly as work was assigned to the ARCS contractors. According to a 1989 EPA study, 50 percent or more of the program management costs may be either fixed or nonrecurring,¹ that is, they do not vary in direct proportion to the remedial work load. Consequently, the ability of EPA to avoid excessive program

¹Booz, Allen & Hamilton Inc., *Analysis of ARCS Program Management Operations* (Oct. 28, 1989).

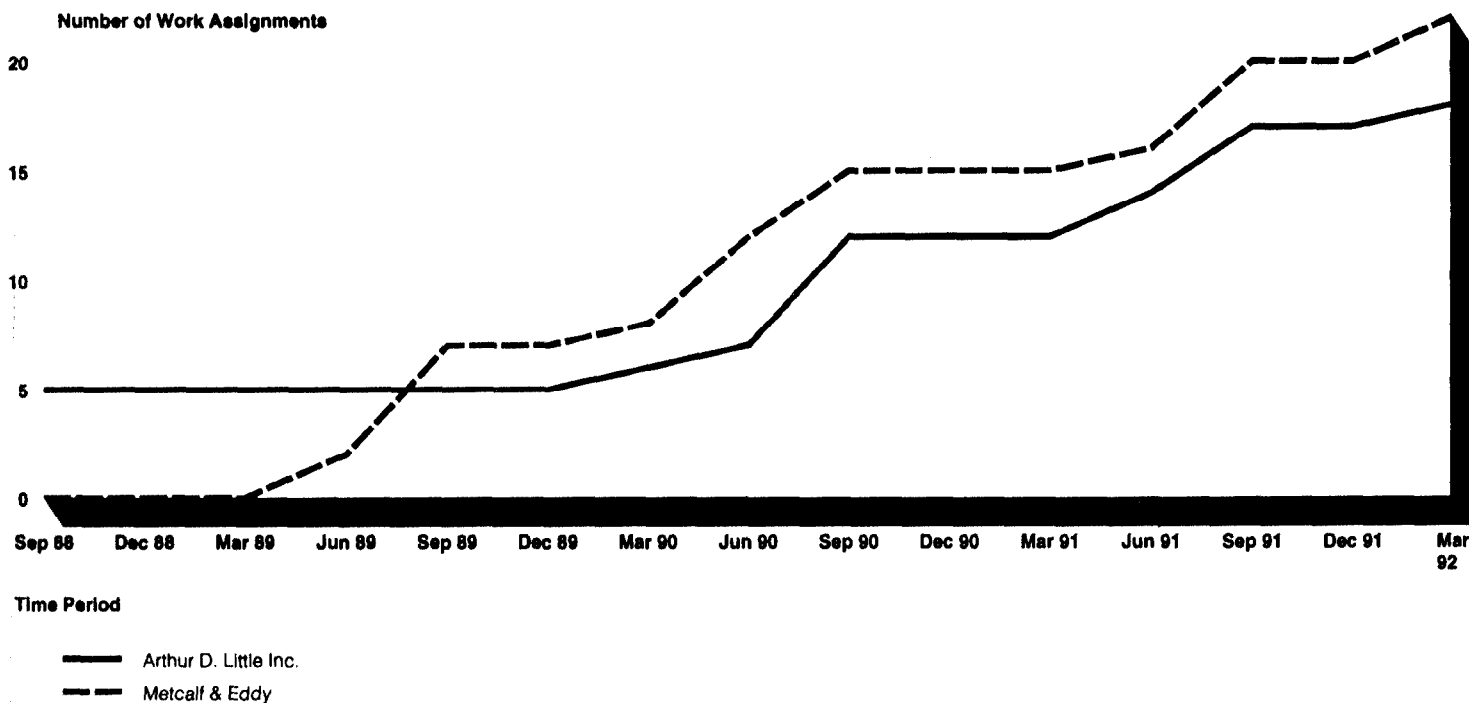
management costs depended on its ability to estimate the ARCS work load, hire the proper number of contractors, and quickly assign work to those contractors. All the contractors incur program management costs; having more contractors than needed for the existing work load would contribute to high program management costs.

EPA's strategy of asking contractors to assemble staff, facilities, and equipment needed for contract work to minimize start-up delays was predicated on the assumption that work would be quickly assigned to the contractors. EPA's overestimates of available work led to significant delays in awarding work to contractors and contributed to high initial program management costs as a percentage of total costs. Expecting a large work load, ARCS contractors invested early on in staff, facilities, and equipment to minimize start-up delays when site work was assigned to them. This work load, however, never materialized. For example, the ARCS contracts specified a guaranteed base amount of remedial hours of effort to be delivered by the contractors. EPA estimated that this base work load would be delivered within the first 2 years of the contracts. However, by May 31, 1991, when almost every contract had been in place 2 or more years, only about half of the contractors had received the base work load.

The two ARCS contractors in EPA Region I that we reviewed had incurred substantial program management costs early in the program, at a time when EPA had awarded very little work to them. (See fig. 2.4.) For example, initial program management costs as a percentage of total costs were high at Arthur D. Little, Inc., in part because of the lack of cleanup work. In September 1988, EPA awarded Arthur D. Little, Inc., an ARCS contract with a maximum value of \$69.1 million. As of September 1989, this contractor had incurred costs totaling \$928,256 but had only been awarded work at five sites. The contractor had lead responsibility for the work performed at only one site and was responsible at the other four for overseeing work performed by the responsible parties. Of the \$928,256 incurred, over 68 percent (\$627,056) had been charged to program management costs. As Arthur D. Little, Inc.'s, work load increased, the percentage of program management costs dropped. For example, by September 1990, Arthur D. Little, Inc.'s, work load had increased to 12 assignments and program management costs (\$1.2 million) had decreased to 59 percent of total ARCS costs (\$2.1 million). As of September 30, 1992, Arthur D. Little, Inc.'s, overall percentage of program management costs had decreased to 30 percent (\$2.5 million) of its overall ARCS costs (\$8.2 million).

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Figure 2.4: Work Assignments Awarded to Arthur D. Little, Inc., and Metcalf & Eddy, Inc.



Source: GAO analysis of EPA data.

The problem of high initial program management costs as a percentage of total costs and low work loads was similar at Metcalf & Eddy, Inc. EPA awarded Metcalf & Eddy, Inc., an ARCS contract in April 1989 with a maximum value of \$138.5 million. By September 1989, this contractor had been awarded work at eight sites and had lead responsibility for work on seven of these. Metcalf & Eddy, Inc., had incurred costs of \$202,752, of which 75 percent (\$153,688) was for program management. As Metcalf & Eddy, Inc.'s work load increased from 8 work assignments in September 1989 to 18 one year later, its cumulative program management costs as a percentage of total costs dropped from 75 percent to 44 percent (\$1 million) for the same period. As of September 30, 1992, Metcalf & Eddy, Inc.'s program management costs as a percentage of total costs had decreased further to 22 percent (\$2.7 million) of its overall ARCS costs (\$12.1 million).

Factors That Contributed to High Initial ARCS Program Management Costs

The high initial ARCS program management costs can be attributed to a number of factors. First, in awarding the contracts, EPA built in excess contract capacity and increased the number of contractors involved to avoid future capacity shortages and to allow for the termination of poor performers. Second, EPA made several key policy decisions—such as implementing an enforcement-first policy and giving the Corps of Engineers more remedial work than anticipated—that effectively reduced the amount of work available for ARCS contractors. Finally, when faced with excess contract capacity, too many contractors for the available work, and high program management costs, EPA did not initiate action to correct the problem, for example by terminating contractors as originally planned.

EPA Built Excess Capacity Into the ARCS Contracts

EPA built excess capacity into the ARCS contracts to increase competition among cleanup contractors and to broaden the base of firms that could perform cleanups. EPA's first generation of cleanup contracts consisted of five Remedial Engineering Management (REM) contracts held by four contractors from fiscal years 1983 through 1988. The increasing number of cleanups and delays in passage of the Superfund Amendments and Reauthorization Act (SARA) in 1986 resulted in a severe contract capacity shortage toward the end of the REM contracts. Because of this experience, EPA deliberately built in excess capacity and awarded more contracts than it expected to need in the long run because it wanted to foster price and quality competition among the contractors; it intended to drop some of the poorer performing contractors after they reached their base level of work.

Although EPA's strategy was to reduce the excess capacity by terminating poorer performers after the base period, EPA has done little to terminate underutilized contracts. The ARCS contracts are level-of-effort contracts, in which the contractors agree to provide up to a specified maximum number of hours of work. Under ARCS, EPA can order up to a total of 15.65 million hours of work from the 45 ARCS contractors during the 10-year contract period. In addition, EPA can order construction work from ARCS contractors' subcontractors, up to a maximum of \$4.2 billion during the 10-year period. As of September 30, 1992, EPA had ordered 6.2 million hours of work, 40 percent of the maximum, from the ARCS contractors, and had paid subcontractors \$120.7 million, or less than 3 percent of the maximum amount. Despite this shortfall, EPA has terminated only one contract and partially terminated one other in response to the excess contracting capacity. Both contracts were located in region IV. By not terminating additional contracts, EPA has continued to carry a large

number of cleanup contractors and excess ARCS contract capacity, which contributes to high program management costs.

EPA Did Not Adequately Consider the Impact of Its Enforcement-First Policy on ARCS' Work Load

Shortly after the ARCS contracts were awarded, EPA announced a new Superfund enforcement-first policy that was intended to shift cleanup leads from EPA to responsible parties. EPA did not adequately consider the impact that this policy would have on remedial work load and did not effectively coordinate implementation among the contracting, enforcement, and Superfund groups.

Although formally announced by EPA in May 1989, the enforcement-first policy was the outgrowth of legal changes, congressional hearings, and major reports since 1986 urging that the cleanup burden be shifted to responsible parties. For example, in reauthorizing Superfund in 1986, the Congress added language to CERCLA that provided a clear basis for the enforcement-first strategy. Section 122 of CERCLA authorized EPA to enter into settlement agreements with responsible parties and provided EPA with tools intended to encourage these parties to settle before initiating Superfund-financed cleanups. In addition, in 1987, the EPA Administrator and the Assistant Administrator for OSWER both testified at congressional hearings on the need for Superfund to use the enforcement program to settle with responsible parties whenever possible.

Despite these clear indications of a policy shift toward having responsible parties perform the cleanups, EPA's Office of Emergency and Remedial Response continued to forecast that the majority of cleanup work would be performed under ARCS contracts. In its 1986 work load estimates, EPA projected that only 30 percent of cleanups would be done by responsible parties—a figure that was consistent with the work load mix at the time. However, since implementation of the enforcement-first policy, responsible party cleanups have increased dramatically—to over 70 percent of cleanups for fiscal year 1992. This dramatic decrease in EPA-lead cleanups has significantly reduced the work load available for ARCS contractors.

EPA, however, did not make any changes to the ARCS contracts in response to this policy change until October 31, 1991, when it terminated a contract in region IV. EPA officials in OSWER and the Office of Administration and Resources Management offered a variety of reasons for not responding more promptly to the decreased need for contracting capacity. First, they said that although they were aware of the impact of the enforcement-first

policy on ARCS' capacity utilization, they were unsure when and to what extent the policy would result in responsible parties' beginning to finance and take the lead on cleanups. Second, EPA officials said that, because of the uncertainty surrounding the pending 1990 Superfund reauthorization, they did not want to act too hastily in curtailing capacity that might otherwise be needed. Additionally, they said that they believed that the time and cost invested in putting the ARCS contracts in place did not justify major capacity modifications or contract terminations.

EPA Assumed Fewer Corps of Engineers Cleanups

In developing its work load forecast, EPA assumed that the Corps would perform less cleanup work under the ARCS program. Instead, the Corps, which first became involved in Superfund design and construction projects in 1981, has been given more cleanup responsibilities, making commensurately less work available for ARCS contractors.

When ARCS program estimates were being developed, relations between EPA and the Corps had become strained, and it seemed possible that the agreement between the two agencies might be terminated. This expectation was one of the reasons EPA included \$4.2 billion in the ARCS contracts for construction subcontractors. However, the problems were resolved, and, in December 1987, EPA established a policy requiring that all remedial actions costing in excess of \$5 million be assigned to the Corps. With the cost of remedial actions often exceeding \$5 million, 53 of 107 remedial action starts between 1987 and 1990 went to the Corps.

As a result of the increased involvement of the Corps, as well as the responsible parties, relatively little construction work has been available for the ARCS subcontractors. At the end of fiscal year 1992, only \$121 million had been spent for subcontractors from the \$4.2 billion contract capacity included in the program. In its October 1991 review of the ARCS program, an internal EPA task force recommended that the agency reduce the \$4.2 billion capacity by \$2 billion to reflect the reduced construction work load. In spite of the substantial reduction in construction work load, however, EPA has not implemented this recommendation.

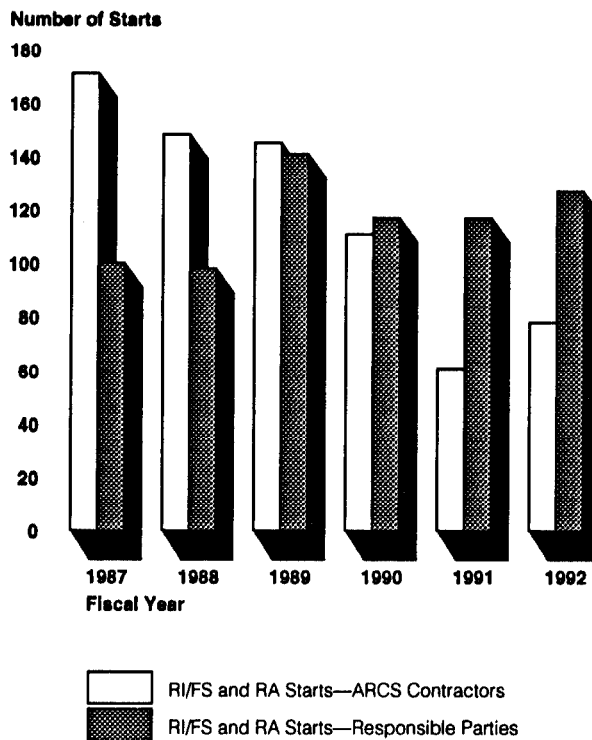
**EPA Overestimated the
Number of Remedial
Investigations ARCS
Contractors Would
Perform**

In its work load forecast, EPA overestimated the number of remedial investigations/feasibility studies (RI/FS). Consequently, less work than anticipated was available for the ARCS contractors.

Prior to awarding the contracts, EPA anticipated that RI/FSs would provide the bulk of the ARCS work load, with over 100 RI/FS starts each year. The number of RI/FSs for ARCS contractors has been substantially lower than expected, however. As figure 2.5 shows, the number of ARCS contractor RI/FSs decreased from 130 in fiscal year 1987 to only 22 in fiscal year 1991 before increasing to 46 in fiscal year 1992. In addition, according to OSWER officials, the number of RI/FS starts decreased because EPA management decided to reduce the number of RI/FSs in order to bring the work load in line with the ability of available staff to manage it.

Figure 2.5 also shows that the number and percentage of remedial actions managed by ARCS contractors has decreased. In fiscal year 1987, ARCS contractors were responsible for 41 remedial actions, compared with only 25 for responsible parties. In fiscal year 1992, responsible parties were responsible for 81 remedial actions, compared with 32 for ARCS contractors. This dramatic increase in responsible party-lead cleanups has significantly reduced the work load available for ARCS contractors.

Figure 2.5: Comparison of Work Load for ARCS Contractors and Responsible Parties, by Fiscal Year



Source: GAO analysis of EPA data.

EPA Delayed in Addressing Reasons for High Program Management Costs

By October 1989, EPA was aware that ARCS program management costs appeared to be too high. Although EPA has taken some actions to reduce program management costs and to shift additional work to ARCS contractors, EPA has not addressed the basic cause of the problem—overcapacity.

EPA has repeatedly studied the ARCS program management cost issue, yet has not developed the data needed to determine whether terminations would be cost-effective. A 1989 study commissioned by EPA reported that the ARCS program management cost rate was about 2-1/2 times higher than the rate for the REM cleanup contractors that ARCS replaced. The report attributed part of this problem to high start-up costs that should diminish over time; but it also recognized that the low work load assigned to the contractors was unlikely to increase in the immediate future and that EPA might not be getting full value from its program management

expenditures.² A second EPA review of program management costs prepared for an August 1990 briefing of the Director of the Office of Emergency and Remedial Response noted that the low work load in some regions resulted in higher program management costs.

In 1991, EPA began to explore options for dealing with program management costs. In February 1991, the acting chief of EPA's Cost Review and Policy Branch sought a legal opinion from EPA's Office of General Counsel (OGC) concerning possible termination of ARCS contracts. EPA's OGC concluded that "the best method by which to ensure that costs to the Agency do not continue to accrue on a particular ARCS contract appears to be the termination of the entire contract for convenience and the payment of the limited monetary recovery to which the contractor is entitled." EPA contracting officials forwarded the legal opinion to the Acting Director of OSWER in April 1991 and pointed out that there appeared to be excess capacity. The contracting officials provided data showing that region IV, for example, had only ordered 42 percent of its base contracting capacity as of December 31, 1990; from 7 to 26 percent of the region's maximum contracting hours were ordered as of that date. They further noted that terminations for convenience would be necessary to drop a contractor from the ARCS program, even if the base contract hours had been met, and that not assigning any optional remedial hours to the contractor does not address the issue of program management costs. They concluded, "If it is the Agency's position that we would drop some contractors after the base LOE [level-of-effort hours] were met, it is time to formulate a strategy for dropping those contractors." Rough estimates prepared by EPA contracting officials at the time noted that costs for terminating a contract would begin around \$300,000 and that such terminations would require cooperation between program and contracting officials and would be labor-intensive.

Our October 1991 report on Superfund contract management made specific recommendations concerning ARCS program management costs.³ We noted that EPA has not acted quickly to deal with high program management costs and that excess contract capacity contributed to those costs. With respect to ARCS contractors' program management costs, we specifically recommended that the EPA Administrator

²Booz, Allen & Hamilton, Inc., Analysis of ARCS Program Management Operations (Oct. 28, 1989).

³Superfund: EPA Has Not Corrected Long-Standing Contract Management Problems (GAO/RCED-92-45, Oct. 24, 1991).

- determine the cost-effectiveness of assigning additional work to ARCS contractors and
- terminate or reduce the scope of any ARCS contracts with excessive program management costs.

To date, EPA has not carried out either recommendation.

EPA revisited this issue in its October 1991 report of the Administrator's task force on ARCS, describing the background of the issue and making recommendations to correct high program management costs. EPA has implemented some of the task force recommendations, as discussed later in this chapter, but has terminated only one contract and partially terminated another contract in region IV.

Unallowable and Questionable Costs Have Been Claimed by ARCS Contractors

Critics have also expressed concern about the indirect costs claimed by some ARCS contractors—a portion of which is charged to program management. Our December 1991 review of indirect costs claimed by one ARCS contractor and similar reviews of other ARCS contractors by DCAA and EPA's IG found that contractors had claimed costs that are either not allowable or are questionable under the FAR.⁴ Because of these prior findings, we also reviewed a sample of indirect costs that two additional ARCS contractors had claimed in their overhead accounts and found instances in which each contractor claimed unallowable or questionable costs in these overhead accounts. All of these reviews show that weaknesses in internal controls have contributed to contractors' failure to properly segregate allowable costs, a problem exacerbated by the current backlog of government audits of costs incurred by contractors.

ARCS contractors claim reimbursement from the government for both direct and indirect expenses. Direct expenses are those that can be associated with specific projects. Indirect expenses are for such things as rent and utilities that are too general to be associated with a specific project but that benefit multiple projects. Both types of costs—direct and indirect—are charged to the program management cost category as well as to the remedial cost category.

Indirect costs are allocated proportionately to all of the firm's clients, including the federal government. The allocation is usually expressed as

⁴Federally Sponsored Contracts: Unallowable and Questionable Indirect Costs Claimed by CH₂M Hill (GAO/TCED-92-37, Mar. 19, 1992). On Apr. 9, 1992, DCAA testified on ongoing audit issues with 17 of the 35 largest Superfund contractors before the Environment, Energy, and Natural Resources Subcommittee of the House Committee on Government Operations.

an indirect cost rate, commonly determined by dividing the total claimed allowable indirect costs by the firm's total direct labor cost. Contractors doing business with the government are responsible for removing any unallowable costs from the indirect costs before calculating the rate that will be applied to government contracts and are required to comply with the standards of the FAR. If contractors do not remove the unallowable costs, the government must then rely on its audit coverage to find and correct the mistakes.

**Unallowable or
Questionable Costs
Included in Indirect Cost
Claims**

We reviewed indirect cost claims submitted by two ARCS contractors and found that each had claimed reimbursement for unallowable and questionable costs. The two contractors involved were Arthur D. Little, Inc., and Metcalf & Eddy, Inc. For each contractor, we reviewed accounts and invoices from the fiscal year for which they had most recently submitted their final indirect cost submission to EPA—Arthur D. Little, Inc.'s, fiscal year 1990 indirect costs and Metcalf & Eddy, Inc.'s, fiscal year 1991 costs. We judgmentally selected accounts for review because of their potential for containing unallowable or questionable costs. We examined accounts such as employee morale, conferences, and social club dues. Because of the volume of transactions, we were only able to select and review a small portion of the costs and vouchers in these accounts. Since only a portion of each contractor's business is with the federal government, only a portion of these unallowable or questionable costs would have related to federal contracts.

Both contractors claimed some clearly unallowable expenses in their overhead costs. For example, the cost of alcoholic beverages is an unallowable expense and should not be charged to the government. In the accounts we reviewed, Arthur D. Little, Inc., inappropriately claimed about \$2,000 for alcoholic beverages. Entertainment costs are also unallowable under the FAR; however, Metcalf & Eddy, Inc., claimed about \$4,400 for tickets to sports events and sports apparel in its overhead costs. Finally, although trade show expenses are not allowable under the FAR, we found that these expenses had been claimed in Metcalf & Eddy, Inc.'s, conference account. The contractor subsequently reviewed the entire account and withdrew \$65,000 of trade show expenses, but we later found about \$5,800 in trade show expenses in another account.

Both contractors also claimed expenses in their indirect cost accounts that we consider questionable. The FAR requires that indirect costs that are allowable must also be reasonable but does not illustrate what a prudent

person would consider a reasonable cost. While the FAR allows reasonable expenses designed to improve employee morale, we question some of these contractors' expenditures for employee parties and entertainment. For example, we question about \$70,000 that Arthur D. Little, Inc., claimed for various entertainment and employee welfare activities, including \$23,000 for an alumni dinner and \$25,000 for Christmas parties. While the prudent person standard is admittedly a subjective one, we question whether these expenses are reasonable.

**Factors Leading to
Unallowable or
Questionable Costs**

The problems with unallowable and questionable indirect cost charges can be attributed to several factors—weaknesses in contractors' internal controls and a lack of contractor-incurred cost audits by the government. These factors were problematic for both ARCS contractors we reviewed and are consistent with findings regarding other contractors reviewed by DCAA and EPA's IG. For example, Arthur D. Little, Inc., did not always identify unallowable costs when they were recorded, relying instead on subsequent reviews to identify these costs. Such a practice increases the likelihood that some unallowable costs will not be identified and withdrawn. Metcalf & Eddy, Inc., chose, for some accounts, to rely on statistical samples rather than to identify the specific unallowable costs. However, unallowable and questionable contractor expenses and problems with contractor accounting systems may go undetected or uncorrected, in part because of the current governmentwide backlog in audits of incurred costs.

Until these problems have been adequately addressed, no assurance can be given that contractors will not continue to bill unallowable costs to the government. Both contractors recognize the need for better internal controls and have taken steps to improve. For example, to help employees identify unallowable costs and charge them to the proper account, both contractors have begun revising their charts of accounts to more clearly distinguish those costs that are not allowable and to provide additional training to employees on the proper classification of expenses.

**EPA Has Initiatives
Under Way to Reduce
Contractor Costs**

After years of inattention to repeatedly reported contract management deficiencies, EPA began last year to address these problems and to take steps to try to resolve them. EPA has focused management attention on contracting and has joined with other federal agencies to resolve problems with audit backlogs and to clarify federal contracting regulations. EPA has also taken a number of actions since the start of fiscal year 1992 to

minimize the extent and amount of costs charged by ARCS contractors. Specifically, EPA has strengthened guidance to and oversight of contractors and, in response to a congressional mandate, set an overall national target percentage for the program management costs charged nationally by ARCS contractors. In addition, EPA has shifted additional work to ARCS contractors to increase their work loads. These actions have helped reduce the percentage of program management costs being charged from 20 percent in fiscal year 1991 to 15 percent in fiscal year 1992.

EPA and Others Have Taken Steps to Address Contract Management Problems

EPA began to tackle contract management problems by acknowledging the need for improvements in contract management and reporting Superfund contract management as a material weakness in its 1992 Federal Managers' Financial Integrity Act report. EPA also formed a Standing Committee on Contract Management that reviewed procurement and contracts management at EPA to identify problems and recommend specific corrective actions.⁵ Following that report, EPA elevated the procurement function in the organization, designating senior officials in headquarters and field units to be accountable for procurement efforts, and developed an implementation plan to correct problems.

DCAA and EPA's IG have acknowledged the need to reduce the audit backlog, and each has taken steps to do so. To reduce its audit backlog, EPA has requested funding to increase the number of IG auditors. EPA has also assumed audit responsibility for 14 contractors formerly audited by DCAA in order to alleviate DCAA's backlog and is considering assuming audit responsibility for about 45 additional contractors. On April 9, 1992, DCAA testified that it had been provided the resources necessary to perform required audits and to reduce the backlog of incurred cost audits, assuming civilian agencies are able to fund them.

EPA, DCAA, and other federal agencies have also participated in an Office of Management and Budget (OMB)-led effort to assess contract management and auditing practices at 12 civilian agencies. The teams were charged with determining the nature of existing weaknesses, finding ways of improving the administration of cost-reimbursement contracts, and ensuring that the federal government was not reimbursing its contractors for unallowable costs. The resulting OMB reports contain a number of recommendations, including ones on clarification of FAR cost principles

⁵Contracts Management at EPA: Managing Our Mission: Staff Report of the Standing Committee on Contracts Management, EPA (200-R-92-001, June 1992).

relating to employee morale and entertainment.⁶ If implemented, these and other recommendations would provide relief for many contracting problems, although other recommendations are more long-term in nature and will require a sustained effort on the part of the administration and civilian agencies to implement.

EPA and the Congress
Mandate Lower Program
Management Costs

Both EPA and the Congress have set national targets for lower ARCS program management costs. In an October 1991 report from the EPA Administrator's Task Force on ARCS Contracting, EPA recommended a national goal of reducing program management costs to 20 percent or less of total ARCS contract costs.⁷ Subsequently, the conference report accompanying EPA's fiscal year appropriations act directed that program management costs be reduced to 15 percent of total costs.

EPA has attempted to lower and control program management costs in several ways. EPA's October 1991 report recommended that, in order to improve EPA's ability to track and analyze program management costs, these costs should in the future be segregated into administrative support costs and technical support costs. The report also recommended that EPA develop guidance describing program management activities, clarifying staffing levels required of contractors, discussing factors that promote efficiency when cleanup activities slow down, and developing various indicators of administrative cost control. EPA issued this guidance on February 11, 1993. EPA's guidance directed that program management costs were to be segregated between administrative support and technical support costs beginning in March 1993. According to the guidance, administrative support costs are necessary for managing the overall contract regardless of the amount of specific site work, while technical support costs are related to site-specific work but cover multiple sites. The guidance also directed that if any of these activities are performed for specific sites, the related costs should be charged to remedial planning activities, not to program management. Regional EPA staff have been working with the ARCS contractors, stressing the need to lower program management costs and, whenever possible, to charge costs directly to sites rather than to program management.

⁶Summary Report of the Swat Team on Civilian Agency Contracting: Improving Contracting Practices and Management Controls on Cost-Type Federal Contracts (Dec. 3, 1992) and Interagency Task Force Report on the Federal Contract Audit Process, Executive Office of the President, OMB (Dec. 3, 1992).

⁷Implementation of the Superfund Alternative Remedial Contracting Strategy (ARCS): Report of the Administrator's Task Force, EPA (21T-2001, Oct. 1991).

EPA Shifted Additional Work to ARCS Contractors

In order to utilize more of the available ARCS contract capacity and to avoid excess capacity, EPA has now made it possible for ARCS contractors to do some of the cleanup work previously done by the Corps and has shifted work to ARCS contractors previously accomplished under other contracts. Under previous EPA guidance, any site cleanups expected to cost more than \$5 million were to be assigned to the Corps, not to ARCS contractors. On December 10, 1991, EPA issued revised guidance allowing site cleanups with estimated costs of up to \$15 million to be assigned to ARCS contractors. EPA estimated that the additional construction work assigned to the ARCS contractors by this change would be \$50 million to \$100 million per year.

As part of its Long Term Contracting Strategy, EPA has also shifted additional work to ARCS contractors as other types of Superfund contracts expired. Until their expiration at the end of fiscal year 1991, EPA used Field Investigation Team (FIT) contracts to perform preliminary site assessments and inspections to help determine whether sites should be placed on the NPL. EPA decided that the FIT contracts would not be readvertised; instead, the work performed under the FIT contracts was transferred to the ARCS contracts. EPA also has Technical Enforcement Support (TES) contracts for services, such as obtaining expert witnesses and searching for the parties responsible for problems at hazardous waste sites. The last of the TES contracts will expire at the end of fiscal year 1994. EPA plans to assign oversight work on TES contracts to ARCS contractors. In February 1992, EPA estimated that these tasks would require 2.7 million hours of effort by the ARCS contractors, which is 17.5 percent of the originally planned ARCS capacity.

Additional EPA Actions to Curb Excess Capacity Could Save Superfund Dollars

Although EPA has taken steps to reduce the percentage of costs assigned to program management, these actions have not entirely resolved the problem. Significant excess contract capacity remains in some regions that, if left unresolved, may ultimately cost the government millions of dollars in unnecessary program management costs. Moreover, nearly one of every five ARCS contracts continues to charge program management costs in excess of 20 percent of total contract costs. In regions that still have excess contract capacity, terminating one or more contracts could reduce program management costs by millions of dollars over the remaining life of the ARCS contracts.

EPA's use of ARCS contracts remains low nationally and, to a greater degree, in certain regions. As of December 31, 1991, contractors had invoiced just

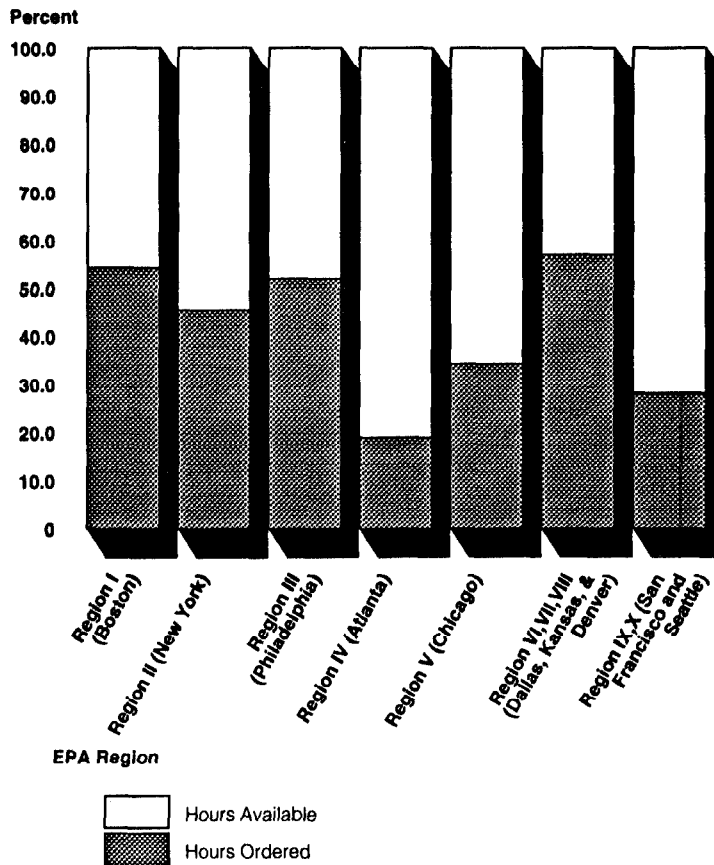
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under 19 percent of the maximum number of contract hours available on the 10-year ARCS contracts. (EPA was unable to provide data on the contract hours invoiced for fiscal year 1992.) Furthermore, EPA had ordered only about 41 percent of the maximum potential number of contract hours from the remaining ARCS contracts as of the end of fiscal year 1992. While the hours invoiced reflect work completed by the contractor, the hours ordered reflect cleanup and oversight work scheduled to take place over the next few years. The fact that less than half of the remaining contract hours have been ordered about halfway through the life of the ARCS contracts raises concern about continued underutilization of contracts.

While capacity on contracts in some regions is being used up, other regions continue to have multiple contracts with low utilization. As figure 2.6 shows, contract underutilization appears to be most problematic in regions IV, V, and IX and X. For example, region IV has invoiced only 7.7 percent (through Dec. 31, 1991) of the maximum contract hours available on its original six ARCS contracts. Region IV has ordered only 22.8 percent (through fiscal year 1992) of the maximum contract hours remaining after terminating one ARCS contract in 1991.

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Figure 2.6: Percent of LOE Hours Ordered From ARCS Contractors, as of September 30, 1992



Source: GAO analysis of EPA data.

To compound the underutilization problem, 8 of the 44 remaining ARCS contracts continue to invoice program management costs in excess of 20 percent of their total costs in fiscal year 1992. Half of these eight contractors are in region V. In fact, of the seven ARCS contractors in region V, six have program management percentages in excess of 17 percent.

Despite this information, EPA has not formally acted to determine whether additional contract terminations are warranted. Our October 1991 report on Superfund contract management recommended that EPA terminate or reduce the scope of ARCS contracts with excessive program management costs. In a 1991 memo, EPA contracting officials estimated that the cost of

terminating a contract would begin around \$300,000, not including costs for EPA personnel and the final audit. This is consistent with the \$314,264 proposed settlement for termination EPA received from one of the region IV contractors in June 1992. In 1991, EPA estimated that terminating two of its ARCS contractors in region IV alone could save up to \$510,000 annually.

Termination cost information and analysis such as this could be useful to EPA in determining whether it might be financially advantageous to terminate additional contracts. For example, the latest available EPA data show that in regions IX and X only 12.1 percent of the maximum contract hours had been used by December 31, 1991, and only 28.1 percent had been ordered by the end of fiscal year 1992.

Despite this low regional utilization rate, excess contract capacity, and a recommendation from the October 1991 task force to consider selective termination of contracts for regions IX and X, EPA has yet to conduct a formal cost-benefit analysis of these contracts. Instead, EPA opted to retain all six contractors in these regions but to give no further work assignments to one contractor in region IX and another in region X. The six contractors in those regions averaged \$718,368 in program management costs in fiscal year 1992, ranging from \$341,077 to \$995,156. With 6 more years remaining on these contracts, EPA could reduce the amount of program management expended on these contracts by \$1.7 million if it terminated the least expensive contractor and \$5.7 million if it terminated the most expensive contractor, after adjusting for an estimated \$300,000 in termination costs per contract. Similar calculations show potential reductions of \$0.2 million and \$2.7 million for region IV and \$0.7 million and \$3.3 million for region V.

Although excess ARCS contract capacity appears to exist in some regions, OSWER officials do not believe contract termination is warranted. While the 45 ARCS contracts included an option to terminate poor performers, these officials believe a termination for convenience to decrease excess capacity would be cost-prohibitive and unreasonable. Instead, EPA has chosen to employ other mechanisms for responding to excess capacity, such as not exercising options or not assigning additional work to contractors performing below satisfactory levels.

Conclusions

As the number of Superfund hazardous waste sites and the corresponding costs to clean them up continue to escalate, EPA has the dual responsibility to eliminate the human health and environmental dangers posed by these sites quickly and cost-effectively. With scarce federal resources and

competing federal demands, it is important that EPA maximize the use of available funds for hazardous waste cleanup activities at specific sites. To date, EPA's performance in this area is poor, with a high proportion of Superfund dollars being spent on program management and indirect costs.

Four years after becoming aware of this problem, EPA has taken some actions to reduce program management costs but has failed to adequately address the problem's root cause—too many contractors and too much contract capacity. Although EPA's strategy was to terminate contracts and reduce contract capacity after utilizing the base contract hours, it failed to do so even after clear indications that high program management costs were linked to problems in the contractors' capacity utilization. To date, EPA has only terminated one ARCS contract and partially terminated one other but has not assessed the cost-effectiveness of further terminations.

Recommendation

To minimize program management cost expenditures, we recommend that the Administrator, EPA, direct the Assistant Administrators for OSWER and Administration and Resources Management to review the remaining capacity of each ARCS contract and, in those regions where there is excess capacity, perform a cost-benefit analysis to determine whether terminating some contracts would be more cost-effective than continuing to pay program management costs for the remaining life of underutilized contracts.

EPA's New Cleanup Contracts Are More Flexible

EPA is currently developing new cleanup contracts to replace the ARCS contracts and is, once again, also studying and implementing several policy changes that could affect the volume and type of work available to Superfund contractors. EPA program and contracting staff are aware that these policy changes could have a significant impact on these new cleanup contracts and are attempting to incorporate flexibility into the contracts to allow for sufficient contract capacity and to minimize future program management costs. EPA's ability to respond to program changes as they occur and, if needed, coordinate prompt and appropriate contract modifications could help to minimize program management and other contracting costs.

EPA Plans New Remedial Contracts

EPA is currently planning and designing new cleanup contracts, known as Response Action Contracts (RACS), that will supplement and eventually replace the ARCS contracts as their capacity is exhausted. EPA has prepared work load forecasts to estimate the structure, number, and size of replacement contracts needed; ensure continuity of cleanup work upon expiration of the ARCS contracts; and help control program management costs. EPA is also using estimates and data from the regions to project when ARCS contracts will expire and need to be replaced in each region. Because actual ARCS capacity usage lags behind EPA's projections, RACS' procurement efforts may be somewhat delayed. Information presented throughout this section on key features of the RACS contracts reflects the official December 1992 draft acquisition model, as well as clarifications, changes, and additions to this document provided by Hazardous Site Control Division (HSCD) staff through April 1993. EPA may continue, however, to modify individual contract features as it completes the RACS contracts for acquisition.

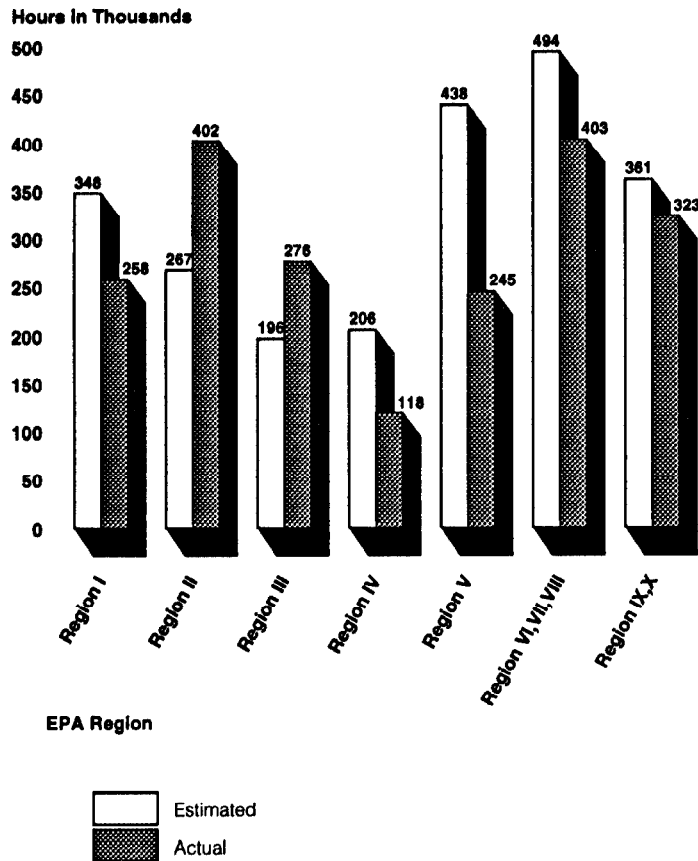
In 1991 and again in 1992, EPA prepared estimates of the upcoming ARCS work load to determine the time frames in which existing ARCS contracts will expire and new remedial contracts will be needed to replace them, and how much contracting capacity will be needed for the RACS contracts. The accuracy of these work load forecasts is important because they will be used to determine the amount of contracting capacity needed and the timing of procurement for the new remedial contracts.

To determine when the new contracts would be needed, EPA staff first estimated how many ARCS contract hours had been used cumulatively through the end of 1991 and, consequently, how many hours remained on the contracts. EPA then reviewed the historical usage of contract hours

nationally to determine the rate of growth. On the basis of this review, EPA calculated a growth rate of 28 percent in the use of contract hours and assumed that this rate would increase to 30 percent as ARCS moved from the start-up phase to the cleanup phase. EPA did not calculate individual growth rates for each region; instead, the 30-percent rate was applied uniformly across the regions. To complete the estimate, EPA matched the forecasts of contract hours needed by each region with the hours remaining on each region's ARCS contracts to see when contract hours would run out and to project when RACS contracts would be needed.

EPA's estimate of the hours of effort needed nationwide on the ARCS contracts appears to be too high. For example, using the most current numbers from its regions, EPA estimated that it would need 2.31 million hours of effort in 1992 but actually used only 2.02 million hours, or 14 percent less. The ARCS contracts, moreover, are regional—not national—contracts, and EPA's estimates appear to be even less accurate when examined on a regional basis. As figure 3.1 shows, EPA estimated that most regions would use contract hours faster than 1992 actual figures indicate. For example, region IV used only 118,261 hours (or 58 percent) of the 205,526 contract hours that staff projected would be utilized, while region V utilized only 244,616 hours (or 56 percent) of its projected 438,482 hours. Projections of when contract hours would be exhausted exceeded the actual usage by about 500,000 hours on ARCS contracts covering 8 of EPA's 10 regions. In contrast, projections of contract hour usage for regions II and III underestimated actual utilization by about 214,000 hours.

Figure 3.1: Comparison of the Difference Between Actual and Projected ARCS Contract Hours Remaining, as of September 30, 1992



Source: GAO analysis of EPA data.

We discussed the projected and actual capacity usage with the section chief for Remedial Action Contracting to determine the significance of the discrepancies. The section chief told us that the discrepancies between EPA's original projections and the actual contract hour usage for 1992 will not hinder the accurate and timely placement of RACS contracts in individual regions. For example, regions VI, VII, and VIII will be the first to need new contract capacity but will probably not need the RACS contracts in place until 2 to 3 months later than originally projected. EPA staff did not view this delay as significant in a procurement cycle that takes approximately 18 months, especially since the first RACS procurement could be slowed by changes that EPA is now making in conflict-of-interest

and indemnification policies. EPA believes that the estimates serve as a tool to be used by EPA headquarters and regional staff to plan and adjust as new information becomes available to determine the timing of upcoming RACS procurements. EPA expects to award the first RACS contract in late Spring 1994, according to the RACS procurement coordinator.

Basic Features of RACS Address ARCS Contract Deficiencies

EPA is designing the RACS contracts with new features to help avoid the excess capacity and high program management costs experienced under the ARCS contracts. Although EPA is still completing the RACS design, it expects to reduce the overall number of contractors and the duration of the contracts, which is currently 10 years for ARCS contracts. EPA will also be able to adjust the RACS design as needed for procurements that occur later. Finally, EPA plans more detailed cost breakdowns and a new award fee process that should help it monitor and control costs more easily.

As now planned, RACS will consist of between 20 and 30 regional contracts with an anticipated total value of about \$4 billion. Reducing the number of contracts by 30 to 50 percent should help EPA lower overall program management costs by reducing the total amount spent on the fixed and nonrecurring expenses on each contract. EPA plans a minimum of two contracts per region to avoid possible conflicts of interest, encourage good performance by fostering competition between contractors, and permit contract terminations should performance problems arise, according to the coordinator.

In place of the 10-year ARCS contracts, the proposed RACS contracts consist of a 5-year base period with an option to renew for one additional 5-year period. According to the RACS procurement coordinator, EPA will be able to end the contract after the 5-year base period if additional contract capacity is not needed. The coordinator also noted that no further program management or remedial costs would accrue unless EPA renewed the contract for another 5 years. The shorter base period, with 20 to 30 percent more hours built into each time option, is designed to allow EPA to adjust site-specific and program support activities as the Superfund program fluctuates.

According to the RACS procurement coordinator, RACS contracts will be procured as ARCS contracts expire or exhaust their capacity, beginning in 1994. Consequently, procurement of the RACS contracts is expected to occur in staggered yearly procurement cycles for the next 4 to 5 years to accommodate the different expiration dates of the ARCS contracts. This

staggered procurement process will provide EPA with flexibility to adjust future contracts as needed.

EPA is designing several key RACS features to help monitor and control costs. First, RACS contracts are expected to come in three standard contract sizes (\$270 million, \$405 million, and \$540 million). The standardized contract sizes will better enable EPA to compare costs across contractors and to channel additional work to more efficient and outstanding contractors. Second, EPA will allocate non-site-specific costs into separate program support subcategories. According to EPA officials, this will improve control over RACS program management costs. Additionally, EPA is taking steps to limit RACS contractors' start-up costs. According to the RACS procurement coordinator, EPA is establishing a limited "mobilization period," or window of time for the contractor to have operations fully functional. EPA also plans to delineate clearly the types of equipment and materials needed to mobilize and to negotiate mobilization costs for each contract. Finally, EPA is developing a new award fee structure with the following innovations: a provisional base fee that may be forfeited for less than satisfactory performance and an award fee after work completion that is earned only for "exceeds expectations" or "outstanding" performance. According to the RACS procurement coordinator, these key features in the RACS contracts should help control program management costs.

Major Policy Initiatives May Affect RACS Work Load

A major policy initiative now being developed at EPA to streamline the cleanup process and Superfund's upcoming reauthorization may affect RACS' contracting needs. In light of these actions, EPA is attempting to incorporate sufficient flexibility into RACS contracts to avoid excessive costs under a variety of possible scenarios. The ultimate success of EPA in minimizing these costs will depend upon the ability of its program and contracting staff to closely coordinate their activities as these initiatives are developed and to take prompt, decisive actions to avoid excess contract capacity and minimize program management costs.

A major EPA policy initiative now unfolding, the Superfund Accelerated Cleanup Model (SACM), could affect Superfund work load forecasts and contracting needs by changing the type, nature, and timing of contractor work. According to an HSCD official, SACM may entail more data collection and decision-making up front and earlier use of removal authorities to expedite remedial actions. SACM could potentially affect the RACS work load forecasts by changing the nature of each project phase (i.e., RI/FS, RD, RA)

and performing cleanups earlier in the process, thereby shifting cost and hour usage data by project phase.

According to HSCD officials, EPA has developed specific RACS contract provisions to provide flexibility for dealing with potential policy changes that may occur with Superfund's reauthorization. For example, if reauthorization reversed the enforcement-first policy and made the federal government wholly responsible for cleanups, the time and quantity options in the contracts would give EPA the flexibility needed to manage an increased work load. If necessary, EPA could procure more RACS contracts to provide additional contract capacity. Conversely, RACS contract options could also expire after the base period, if necessary, to accommodate program changes that might decrease contracting needs.

This flexibility for responding to unanticipated work load shifts resulting from changes in EPA policy or Superfund reauthorization will be helpful to EPA in managing the RACS contracts to minimize excess capacity and program management costs or to ensure continuity in cleanup work if additional contract capacity is needed. As discussed in chapter 2, EPA had the potential with ARCS contracts to reduce contracting and program management costs by terminating contracts. But EPA's lack of decisive action on ARCS contracts exacerbated the problems of excess contract capacity and high program management costs.

Conclusions

In designing new cleanup contracts, EPA has included key features that should help control program management costs and maintain appropriate levels of contractor capacity. The ultimate usefulness of the flexibility being built into RACS contracts depends, however, on EPA's ability to effectively coordinate new policy initiatives and program changes and to utilize the flexible features wisely, decisively, and in a timely manner in response to changing Superfund contracting needs. To make the most effective use of these contract features, EPA will still need to monitor contract hour utilization closely, both by region and by individual contract, to ensure cost-effective use of contractor capacity. The impact of major policy initiatives, such as SACM, and of Superfund's reauthorization is uncertain at this time, but they have potential to affect work load and contract utilization significantly. EPA will need to monitor closely SACM's implementation, other relevant EPA policy initiatives, and possible changes from Superfund's upcoming reauthorization and adjust RACS contracts accordingly. EPA's ability to control program management and other RACS contract costs will depend in part on its ability and willingness to react in

a timely manner to these new policy initiatives and program changes. Effective coordination between Superfund program and contracting staff will be essential to avoid excess contract capacity and to minimize program management costs.

Recommendation

To ensure adequate control over contract capacity and program management costs on RACS contracts, we recommend that the Administrator, EPA, direct officials of the Office of the Assistant Administrator for Solid Waste and Emergency Response and the Office of the Assistant Administrator for Administration and Resources Management to coordinate the development of SACM, other policy initiatives, and major program changes that may occur during Superfund's reauthorization with the development of RACS contracts, modifying the contracts as needed to avoid unnecessary cost to the government.

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