First Key Issue:
To What Extent is Superfund Dependent on Contractors?

The Superfund program has over $1 billion to spend in fiscal year 1989 to buy contractor and consulting services. That amount is 87 percent of EPA's Superfund budget of $1.425 billion. The balance of the appropriated funds for fiscal year 1989--$190 million--will pay for EPA's administrative expenses: the overhead and staff to manage and oversee the contractors' work.

Each year, Congress, through appropriations, reconfirms the policy to contract out the Superfund program. In the first Superfund appropriation (fiscal year 1982) Congress set a capon administrative expenses of 21 percent ($41.6 million). Between 1982 and 1989, as the total Superfund budget grew *over* 600 *percent,* Congress allowed EPA's administrative expenses to grow by only 360 percent (see table 1). Until 1987 the percentage of the cap steadily declined to 10 percent or $135 million. In 1988 the cap rose to 16 percent ($182 million) before it declined again in 1989 to 13 percent. If the percentage of the cap had remained constant since 1982 at 21 percent, EPA would have an additional $109 million for internal spending in 1989--a 60 percent increase. As it is, the Superfund program has $8 million more--an increase of 4 percent--to spend internally in 1989 than it did in 1988; that is, no increase in constant dollars. Meanwhile, external (mostly contracting) funds have increased 27 percent in 1989 over 1988; a substantial growth rate for any industry.

Table 1.—Total Superfund Program Appropriations v. Administrative Cap

Fiscal year	Appropriated funds ($ roll)	Administrative cap ($ roll)	cap as percent of total funds
1982	200	41.6	21
1983	210	37.4	18
1984	410	64.0	16
1985	620	87.6	14
1986	900	90.0	10
1987	1,411	135.0	10
1988	1,128	182.4	16
1989	1,425	190.0	13

SOURCE: Fiscal year appropriations acts. The administrative cap is expressed *aa,* "no more than . . . of these funds shall be available for administrative expenses."

Indeed, data from annual reports for public companies active in the cleanup market frequently show growths in annual revenues of from 200 to 300 percent over the past five years from 1984 through 1988, with net incomes often rising at a much higher rate than revenues.[9] Such growth has also meant sudden, large increases in technical staffs. Although much of this growth has been from Superfund work, a lot of money has been coming from other Federal cleanup programs (which are expected to increase), State work, and private cleanups. In the past year, the financial community has been discussing the bright future for environmental

9 The following examples taken primarily from company reports illustrate the state of this contractor industry; the companies are long time major Superfund contractors: 1) Ecology and Environment, Inc., net earnings rose 204 percent from 1984 through 1988, while net income rose 365 percent; as the fraction of earnings from Environmental Protection Agency contracts rose from 60 percent to 70 percent from 1986 through 1988, net income per common share rose SO percent. 2) Roy F. Weston, Inc. earnings rose 240 percent from 1983 through 1987, while net income rose 970 percent and earnings per share rose 600 percent. Weston said that "Fifty percent of the Company's growth has been due to remedial investigations and 'front-end' studies of hazardous waste sites, which require design, construction management and cleanup activities." Moreover, there was a 72 percent increase in staff from 1986 to 1987 an increase of 774 people in one year. 3) ICF sales increased 216 percent from 1983 to 1987, and from 1987 to 1989 sales are expected to double (no data on profits available). 4) Environmental Treatment and Technology net revenues rose 230 percent from 1983 to 1987, while net income rose 160 percent. In the first half of 1987, the company added over 200 employees for a 25 percent increase. 5) CH2M Hill sales increased 25 percent from 1985 to 1987 while net income increased 82 percent.

services firms, in large measure because of the government cleanup business.

Over the eight-year history of Superfund, some private sector consulting and engineering firms have also, inevitably, gained considerable influence over the direction and content of the Superfund program, while government controls have not kept pace. These firms together perform literally all program activities. They develop policy positions for the program; analyze legislation; implement the SITE technology demonstration program; evaluate potential Superfund sites and, through their analyses, determine whether they qualify for fund-financed cleanup. Contractors analyze cleanup technologies, perform risk assessments, identify feasible cleanup alternatives, and draft Records of Decisions. They design cleanups and do the physical job of cleaning up Superfund sites. Rarely does one contractor do all these tasks.

Contractors write government requests for proposals and scopes of work for new government contracts. Contractors participate in the management and evaluation of other contractors.

Contractors also help EPA deal with the public. They operate the Superfund telephone Hotline that responds to questions from the public--a $9 million contract over 1987 to 1989. They sometimes represent EPA at technical conferences and frequently coauthor papers with EPA staff. Public participation programs are designed and run by contractors; contractors represent EPA at citizen participation meetings, and they sometimes prepare the responsiveness summary for site Records of Decision. Contractors develop and run Superfund training sessions and write Superfund publications, including guidance documents that translate the National Contingency Plan (NCP) regulatory instrument into operating principles. The NCP itself results from extensive contractor work. Contractors research and write reports to Congress for EPA and provide other analyses that Congress and others use to evaluate the Superfund program. Table 2, which is from the statement of work for ARCS contractors, illustrates the broad range of activities in the remedial part of the program.

A small portion of Superfund's external funds go to States through cooperative agreements. States then use the funds to contract out much of the Superfund work for which they have taken responsibility.

Each component of the Superfund program has its own set of prime contractors (not including many more firms which carry out field activities and others which are subcontractors in specialized areas). The remedial program has field investigation team (FIT) contractors and remedial contractors (REM and ARCS). The removal program has emergency removal contractors (ERCS and mini-ERCS), technical assistance teams (TAT) contractors, and environmental services assistance teams (ESAT) contractors. The enforcement program has technical enforcement support (TES) contractors, whose work is nearly invisible to the public. While subcontractors greatly multiply the number of firms participating in the Superfund program, Superfund contract money is funneled through a few large firms. Of the total value of active Superfund contracts (of all types), about 70 percent --$3 billion--is split among six prime contractors.[10]

In 1988 EPA revised its contract concepts for the three components of Superfund.

10 The firms and the total value of their Superfund prime contracts are: CH2M Hill ($829 million), Ebasco ($S04 million), NUS ($492 million), CDM ($409 million), Weston ($388 million), and Ecology and Environment ($364 million). Sometimes significant amounts of money go to subcontractors, although the prime contractor typically makes a fee on those amounts. Also, these same firms may be significant subcontractors on other prime contracts.

Table 2.-ARCS Contractor Tasks

1. SITE-SPECIFIC PROJECT MANAGEMENT	
a Site Planning	
b. Project Monitoring and Control	
c. Project Coordination	
2. REMEDIAL PLANNING	
Project Planning	i. Remedial Alternatives Screening
b. Community Relations	j. Remedial Alternatives Evacuation
c. Field investigation	k. Feasibility Study/Rl/FS Reports
d. Sample Analysis and Validation	l. Post RI/FS Support
e. Data Evacuation	m. Enforcement Support
f. Assessment of Risks	n. Miscellaneous Support
g. Treatability Study/Pilot Testing	o. Expedited Response Action
h. Remedial Investigation Reports	
3. REMEDIAL DESIGN	
a. Project Planning	g. Preliminary Design
b. Community Relations	h. Equipment/Services Procurement
c. Data Acquisition	i. Intermediate Design
d. Sample Analysis/Validation	j. Prefinal/Final Design
e. Data Evacuation	k. Post Remedial Design Support
f. Treatability Study/Pilot Testing	
4. REMEDIAL IMPLEMENTATION	
a. Procurement Support	
b. Construction Management	
c. Technical Engineering Services	
5. OTHER TECHNICAL AND MANAGEMENT ASSISTANCE	
a. Remedial Oversight	
b. Enforcement Support	
c. Community Relations	
d. Data Management	
e. Analytical Support	
f. Other Technical Support	

SOURCE: U.S. Environmental Protection Agency, from the ARCS Contractor Statement of Work

While the trend is toward increasing the numbers of contracts and giving the regional offices more contracting control, the impetus for the changes differ among the component programs.

- In the remedial program, regional ARCS contracts, as discussed below, are phasing out national REM contracts. They will increase the number and total value of prime contracts and will constitute a layer of project management contractors between EPA and site cleanups. EPA has stated that the ARCS contracts are to improve competition and continuity in and provide performance based incentives for remedial contract work.
- The Superfund enforcement office changed its two national TES contracts ($57 million each) into eight, five-year TES contracts initially valued at **$131** million each. The enforcement program claims that projected increased cleanups placed into that division, instead of fund-financed cleanups, will require more money. As of January 1989, six of the contracts were awarded (see table 3).
- The removal program has begun to add regional mini-ERCS contractors to its existing national zone ERCS contractors. An EPA IG report in 1987 on ERCS contractors found excessive costs being charged and suggested that lack of contractor competition was a reason. EPA responded in congressional hearings in April 1987 that the number of ERCS contractors would increase from four to 25 and that 17 of them would be selected that year. One year after the hearings, only eight had been selected for three of 10 regions. This reflects the administrative difficulties faced by EPA in attempting to spend appropriated funds. The total value of active ERCS contracts is about $500 million.

Table 3.—New Technical Enforcement Support (T' ES) Contracts (as of January 1989)

Zone	EPA Regions	Contractors	Maximum Value ($ roil)	Contract Hours (1,000s)
One	1,2	Alliance Technology	136	2,460
		CDM	124	2,460
Two	3,4	CDM	118	2,480
		Dynamac	107	2,480
Three	5,6,7	(under negotiation)		
Four	8,9,10	PRC	117	2,480
		SAIC	109	2,480
Total value, $ mil			711	

NOTE: TES Contractors support both Superfund end RCRA enforcement.

SOURCE: OTA from information supplied by EPA.

Alternative Remedial Contracts Strategy

ARCS contracts, for the heart of the Superfund program--remedial cleanups--are new, major project management contracts. Therefore, OTA has examined ARCS contracts in greater detail to illustrate current contracting issues.

ARCS was preceded by the REM contracts started early in the program.[11] Under the REM system, seven national contracts have been awarded. The major REM contracts have been held by four firms: NUS Corp.; CDM; Ebasco Services, Inc.; and CH2M Hill. Total contract value through 1990 is $829 million. Two minority-owned contracting firms have also been awarded small REM contracts, totaling $42 million.

Organized by region or combination of regions (zones), ARCS contracts are expected to number many more than the old REM contracts, because of multiple contracts in regions or zones and the growth of Superfund.[12] Each contract will have a potential value of from $60 to $250 million, or more.

The ARCS contracts were designed to have wide ranging responsibility for the remedial phase of Superfund--from site studies to complete cleanup. The REM contractors were engaged for *individual*, discrete tasks, such as an Remedial Investigation/Feasibility Study (RIFS) or community relations plan, but not necessarily all tasks for a site. For specific sites, the ARCS contractors will: 1) manage site projects, 2) plan and design remedial actions, 3) implement remedial work, and 4) provide other technical and management assistance (see table 2). ARCS contracts, like REMs, will also oversee subcontractors who do pieces of the project work, a practice which is not necessarily ineffective or avoidable. However, the ARCS contractors are supposed to exercise much more control of subcontractors and have more responsibility for their technical work. This is a positive change.

J. Winston Porter, Assistant Administrator of EPA's Office of Solid Waste

11 The official name for REM contracts is: Enforcement and Remedial Planning Activities at Uncontrolled Hazardous Substance Disposal Sites.

12 Initially 30 to 40 contracts were planned; less will probably be awarded.

and Emergency Response, has described ARCS as a new initiative under a "speed the pace theme" for Superfund:

> ... We are looking at site cleanup from a 'project management' perspective. This approach should pay benefits through greater efficiency and accountability. Phases of the process such as developing the [RIFS], design engineering, and construction management could all be accomplished by one firm or organization with proven expertise in project management. Specialized work and opportunities for smaller businesses could be obtained through subcontract from the project management firm . . .[13]

The project management approach, of which the ARCS forms the cornerstone, was laid out in an August 1987 memo by Porter. The memo identifies problems in the remedial program of pace, accountability, and continuity. But while the memo explicitly mentions timeliness 12 times, cleanup quality only appears twice. The memo begins, 'The Administrator and I have made the completion of current projects *the highest near-term priority* within the Superfund program." Porter then discusses the existing system that "has involved a large number of pass-offs and downtimes, culminating in lengthy project execution periods." The memo concludes that "having so many organizations [REMs, the Corps and engineering firms, contract labs, EPA reviews] involved, we have had difficulty in fixing accountability and responsibility."

Porter states that the objective of the project management concept is: "... to have one management organization with overall day-to-day responsibility for the technical execution of the work." This project management organization would be under the direction of EPA's project manager, but EPA acknowledges that the ARCS contractor, *not EPA managers,* would be "accountable and responsible." Thus, from Porter's perspective, EPA's role is to overview, make fundamental decisions, and be the basic spokesman to the public, governments, and Congress.

According to another EPA document, "the ARCS concept is aimed at increasing competition, incentivizing [sic] performance, and promoting project continuity. EPA has also described ARCS as further decentralization of program responsibility to EPA regions, as the contracts will be awarded and managed by regions, rather than by EPA headquarters.

Project management *in the public interest* by government workers is imperative for Superfund. Moving project management outside the government, however, adds another layer of contractors between EPA and the site problems the agency is charged with identifying and remediating. It avoids fixing a flaw in the current program: not enough internal EPA technical and project management expertise, even with extensive contractor support. Porter's memo (see above) laying out the project management concept recognizes this internal deficiency. He states, "I believe this [project management] concept also recognizes the fact that we will likely have difficulty in maintaining a large cadre of experienced engineering and construction managers in our organization." This is the crux of the issue.

But Porter says contractor project management organizations will eliminate EPA's *need* to "pull all the pieces together." In other words, contractors instead of government workers will manage contractors; contractors will manage projects instead of someone *in the government* managing the projects. The critical issue will

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13 J. Winston Porter, U.S. Environmental Protection Agency, "Superfund Progress and Prospects," remarks prepared for delivery at the Hazardous Materials Cent rol Research Institute Superfund '87 conference, Washington, DC, Nov. 16, 1987, p. 10.

Contracting," an undated EPA document given to OTA in late 1987, p. 1.

remain under ARCS: How will EPA ensure effective quality control of contractor work and consistency among contractors?

Will ARCS Increase Competition?

Whether ARCS will increase competition in the remedial program can be evaluated by answering two, related questions. First, has the system been opened up to a wider variety of contractors? And, second, do regional staff have a larger contracting pool from which to draw? OTA's review of the ARCS contracts awarded as of January 1989 shows that the system is pulling in some different regional contracting firms that were not visible under the REM system but the effective pool of contractors remains about the same as before.

In some regions EPA staff will have more *prime* contractors to call upon than they did under the REM contracting system. And, while increased numbers of prime contractors implies increased competition and perhaps more EPA control, it does not tell the whole story. Much of the remedial contract work to date has been performed by subcontractors rather than prime contractors. Thus, the real contracting pool under the REM system was as large as it will be under ARCS contracts if both prime and subcontractors are considered.

By January 1989, ARCS contracts had been awarded for Regions 1,2,3 and 5 and the zone comprising Regions 6, 7, and 8. Contracts for Region 4 and the zone for Regions 9 and 10 are still under negotiation and signed ARCS contracts are expected this year. Table 4 lists ARCS contracts awarded as of January 1989, including the prime contractors, team subcontractors, and the dollar value of the contracts. The 18 contracts awarded so far have a total potential value of $2.7 billion over 10 years (which is really a relatively small amount for the next 10 years of Superfund).

For the 18 new contracts, 13 firms were selected as primes (three firms won two each, and one firm won three). Of the 13 firms, 9 have had or have national Superfund contracts (four have had REM contracts). Of the 4 *new* firms in the system, 2 have teamed up with other firms (called *team subs)* that have had or have national Superfund contracts. OTA estimates that about 20 percent of the total money will go to firms new to the Superfund system (counting both primes and team subcontractors).

Will ARCS's Performance Incentives Work?

Competition on the basis of quality work *after* contracts have been awarded is more uncertain than competition *before* firms get the work. Incentive to perform well has been supposedly built into ARCS contracts through the awarding of multiple contractors by region and award fees. Thus, RPMs will ultimately be able to pick and choose among the available ARCS contractors, assuming that at any time there is significant unused contractor capacity. Judgments as to which ARCS contractors are performing better than others will take some time, and evaluations will be made prior to completion of major pieces of work (such as RIFSs which take at least a couple of years to complete or complete cleanups which take several more years). Meanwhile, EPA staff plans to evenly distribute work or to make judgments on the basis of their past experiences with the same contractors under the REM system or through personal knowledge.

Under the REM system, a judgement that a contractor was not performing well was difficult to substantiate bureaucratically. Although there are some very experienced and capable RPMs, all too frequently a relatively inexperienced, often young, RPM has to go up against experienced contractors. Even some experienced RPMs have found challenging a REM contractor a difficult and intimidating task. Contractors believe that

Table 4.— Regional ARCS Contracts (signed as of January 1989)

Region	Prime Contractors	Maximum Value ($	Contract Hours (1,000s)	Team Subcontractors
One*	NUS	146	300	Badger, JHR
	Arthur D. Little	69	145	Remediation Tech, Havens & Emerson, Inc.
Two*	Ebasco Services	223	560	IT Corp., Wehran Eng, Hitman-Ebasco
	ICF Technology	63	145	Gibbs & Hill
Three	NUS	216	560	Gannett-Fleming
	Ecology & Environment	63	145	none
	CH2M Hill	223	560	none
	TetraTech	65	145	Wapora, GeoTrans
	Black & Veatch	65	145	EarthTech
Four*				
Five	CH2M Hill	227	560	none
	Black & Veatch	220	560	Warzyn Engineering
	WW Engineering & Science	58	145	Limno Tech, Dr. J. Goodman, Alderink & Assoc.
	PRC	212	560	ICF, Versar
	Ecology & Environment	61	145	none
	Roy F. Weston	222	560	Dames & Moore, Engineers Intl., Life Systems, Hubble Roth Clark, Reed Quebe Allison Wilcox & Assoc.
	Donohue & Assoc.	227	560	Ebasco, STS Consultants, John Mathes Assoc., Life System/Icair
Six and Seven	CH2M Hill	152	300	none
	Jacobs Engineering	150	300	McClellands, Terracon
Eight, Nine, and Ten*				
Total Value, $ mil		2,662		

"Contracts still under negotiation.

SOURCE: OTA from information provided by EPA.

RPMs can and do give contractors critical evaluations. The ARCS system will not change the technical expertise level of RPMs, but the criteria for contractor managers is quite stringent and they are likely to be considerably older and more experienced than most RPMs. In fact, over time ARCS contracts could decrease RPM expertise relative to that of the contractors because ARCS puts great emphasis on contractor site managers, giving ARCS contractors increased importance. Unless there is substantial internal support for and reliance on RPM judgement, making a poor performance rating on ARCS contractors may be more difficult to accomplish--the stakes are higher under ARCS than the REM system. As a result, the project management concept could undermine independent government control of contract work *unless there* is *increased emphasis on EPA staffing needs.*

Underlying the whole notion that ARCS will breed competition *after firms win contracts* and lead to higher quality work, according to EPA, is that 50 percent excess aggregate capacity has been built into the contracts. EPA says, 'This excess capacity is essential to the performance incentives in ARCS since contractors are not assured of receiving orders that will meet the full contract capacity.[15] But will this calculation over the 10-year life of ARCS contracts be accurate? Or, like previous contracting

Smith, et al., "ARCS: A Performance Based Strategy," Superfund '88 conference proceedings (Silver Spring, MD: Hazardous Materials Control Research Institute, November 1988). Although the lead author works for EPA, the other two authors of this paper which describes the design and operation of ARCS work for one of Superfund's major program support contractors. Of 36 presentations at Superfund '88 by EPA personnel, two-thirds were coauthored with contractors.

programs, will there be such a high demand by EPA for contractor work that essentially all ARCS contractors will receive the maximum and not the guaranteed minimum amount of work--perhaps long before 10 years? It would be very useful for EPA's IG to monitor the initial flow of work assignments to ARCS contractors during the next year or two to check this critical design feature of ARCS contracts.

Finally, the performance award fee system used in ARCS has been used in other major contracts and, based on our studies, has not resulted in a consistent high level of quality contractor work, although many observers think that there have been definite improvements over time. A November 1986 survey of six EPA regions found about one half of the 32 respondents (mostly RPMs) saying that the award fee approach was not effective.[16] Some specific comments were:

- "There are few, if any, incentives built into the REM contract that discourage the production of mediocre to low-quality documents. The award-fee is not an effective tool to correct problem areas in the RI/FS process; this has the potential to cause (and in several cases it actually has) project overruns."
- "Non-effective--the only meaning it has to the contractors is if it is not average or above. Dollar values are too small to be meaningful."
- "Not effective enough. The contract encourages mediocrity and not excellence."
- "It is not [effective]. It's just gravy to REM contractors already making too much money for low quality work. LOE (level of effort) contracts favor using as many hours as possible. No incentive to do good quality work at a reasonable cost."

Although, theoretically, better performance results in higher award fees, cost control objectives by contract managers may limit award incentives for improved work. Also, it should be noted that giving a contractor a low or a high performance rating, which EPA staff say has the most impact on contractors, requires considerable work by EPA staff. There is a built-in incentive to give contractors average or above average ratings. Also, there is considerable uncertainty from the contractor's perspective on how award fees will be decided, since so much depends on individual judgments by EPA staff.

Will the Project Management Approach Assure Continuity?

Project continuity as a site moves through remedial phases is an important goal and recognition of a lack of it in the program is commendable. But the ARCS solution may not help much.

There has been considerable attention under the REM system to delays caused by *handoffs;* that is, contractor changes between project phases. And when a new contractor lacks confidence in a previous contractor's work, these delays multiply. Since the ARCS contractors will be assigning the same discrete tasks among subcontractors, handoffs will still occur.

Another aspect of project continuity is people. One contract *firm* may have a site project management contract throughout a number of phases of a site project. But this does not guarantee that the same **people** will be involved or will manage the site through the period of the contract. First, as stated above, different subcontractors will be handling different phases of work. Second, EPA requires that senior key contractor personnel work on a contract for a minimum of 120 days. After this period many of these people are likely to be moved to other, probably newer, contracts to help win them. Third, given the high mobility of the Superfund workforce (driven by high demand) and the

16 U.S. Environmental Protection Agency, "RI/FS Improvement Analysis," contractor study by CDM, July 1987.

length of site projects, there is no reason to believe that, even within ARCS contractors, the managers and technical staffs will remain in place throughout the full cycle of site remediation--or even a significant fraction of it. And, it is **people,** not solely organizations, that provide institutional memory or continuity.[17] One major PRP has a policy of moving a project to the new firm when a key project manager moves there, something the government cannot do. Moreover, high turnover of EPA people means that project continuity is also jeopardized from the inside.

And, lastly, the project management concept is at risk because of the high overall cost of running a site project through the remedial planning, design, and implementation phases. The award levels of the ARCS contracts may not be large enough to cover that overall cost. For instance, the smaller contracts have maximum potential values around $60 million over 10 years. Turning over just three small sites could consume an entire ARCS contract. This phenomena is already causing one region to assign only RIFSs to ARCS contractors and to await knowledge of the cost of the cleanup before determining whether the ARCS contractors or the Corps of Engineers is assigned the actual remediation. In fact, it is our understanding that, in general, ARCS contractors may only handle the actual cleanup if estimated costs are below $5 million, leaving most cleanups contracted through the Corps of Engineers. This is the same process used under the old REM strategy. And, it illustrates the conflict between the project management and competition goals of ARCS. In order to award multiple contracts per region, individual ARCS contract values have been kept too low to accommodate the true cost of taking a significant number of sites through the entire process and to provide 50 percent excess capacity.

Will *Decentralizing Contracting to Regions Improve Management?*

On the face of it, giving regions greater control over the contractors who do their work seems efficient and appropriate. It assumes, however, that the expertise to select, negotiate with, and manage contractors is available in the regions. Regional staff will not only have to be able to make technical judgments of contractor performance but also administer increased numbers of higher value contracts. Not only will technical and administrative expertise be required at the regional level but decentralizing to regions will also mean added regional costs.

Does significant management expertise to manage the ARCS exist in EPA regions? Regions have been responsible for managing State cooperative agreements, and in a capping report on State cooperative agreements in 1988, EPA's IG concluded that EPA regions have not been effective managers of State contracts. States have been allowed to fall behind on schedules and not reach goals or objectives. States have been experiencing "significant problems completing [RIFSs]." And, monitoring of State pre-remedial work has been inadequate. The IG found "widespread noncompliance with procurement requirements" by States, which means that States were not adhering to Federal standards in awarding Superfund contracts.

17 Some contractors are saying that the turnover of key site project management people is really not that important. But site evaluations and cleanups seem to fit a fundamental category of effort--project based--which has always been recognized to require stable direction over reasonably long periods. Like making motion pictures, constructing large buildings, or performing technology assessments, cleaning up toxic waste sites will be more efficient if the same people are in charge from beginning to end.

Overall, the IG said, "Regions were not effectively performing their oversight responsibilities."[18]

Additional evidence of regional shortcomings comes from another IG report which concluded:

> Contracting methods . . . did not follow established Agency procurement policies and procedures. Also, EPA personnel allowed contractors to start work prior (up to 8 months) to signing delivery orders and did not subject the technology manufacturers to the normal competitive bidding process.[19]

EPA Administrator Lee Thomas told Congress in April 1987 that expanding competition in contracting services would require increased numbers of contract managers. Referring to removal staff, he said, "We will double the number of contract managers we have on that staff to look at those projects, oversee those projects, from a financial management point of view this year."[20] Doubling contract managers for new removal contracts and doubling contract managers for new remedial contracts will double the cost of administering contracts. But, as noted earlier, as a result of congressional action, there will be no real increase for EPA's spending on the administration of Superfund.

U.S. Environmental Protection Agency, Office of Inspector General, "'Capping Report' on EPA, Office of the Inspector General, Audits of Superfund Cooperative Agreements for Fiscal Years 1985 through 1987," March 29, 1988, p. 4.

19 U.S. Environmental Protection Agency, Office of Inspector General, "Review of Region 4's Management of Significant Superfund Removal Actions," September 1988, p. 6.

20 U.S. Congress, Superfund Implementation, S. Hrg. 100-261, hearings before the Senate Subcommittee on Superfund and Environmental Oversight of the Committee on Environment and Public Works, April 14, 1987, p. 150.