
Summary

This background paper explores five key questions about contracting in the Superfund program. Here we give a capsule summary of our findings for each key issue and then present some thoughts about the use of Superfund contractors in the future.³ A more detailed discussion of congressional policy options will be given in the assessment's final report. In the following sections, we explore the key issues in more detail and include several specific examples of contract and contractor problems.

Five Key Questions

First, to what extent is the program dependent on contractors?

During the last eight years, the Superfund program has been increasingly dependent on contractors, who have received between 80 and 90 percent of its funds each year. Over that time, private contractors have received \$4 billion from the Superfund program.

Program funds for external spending increased 27 percent in 1989 over 1988, from \$946 million to \$1.24 billion. For internal, administrative expenses in fiscal year 1989, the Superfund program has \$8 million more than it had in fiscal year 1988--an increase of 4 percent, from \$182 to \$190 million; that is, no real increase in constant dollars. Figure 1 shows how money for contracting (over 80 percent of external funds) has escalated sharply between 1982 and 1989 while, in comparison, funding for EPA staff (about 65 percent of administrative funds) has remained flat.

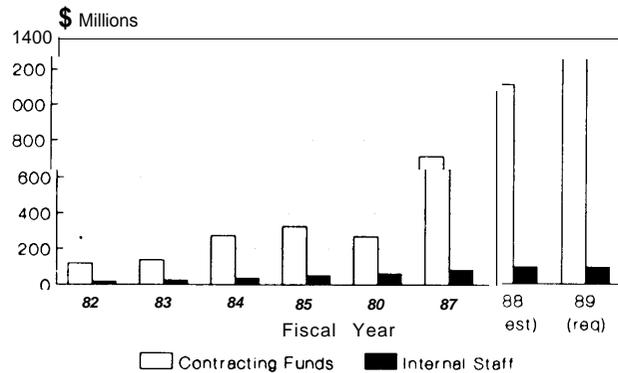
No discussion of contractor liability is included here. Although contractors and some others believe this to be an important issue, OTA has not seen evidence to connect contractors' concerns about their liabilities with their willingness to enter or stay in the market or their performance. More and more large and small firms of all types have entered the Superfund market. Either contractor have found ways to address their liabilities (e.g., self-insurance, subsidiaries, indemnification, protection by State laws) or the profit potential is great enough to offset concerns.

Low funding for EPA staff in general has resulted in low salaries for key Superfund people. Remedial Project Managers (RPMs), for example, who are on the frontline of Superfund implementation, can make less than \$20,000 a year while being responsible for several sites, each involving multimillion dollar contractor studies and cleanups. They also have little in-house technical, legal, and administrative support because of limits on EPA staff. A recent contractor study for EPA's Office of Research and Development documents Superfund implementation problems caused by heavy dependence by EPA staff on contractors working for EPA and responsible parties (see box A). To illustrate contracting issues in Superfund, we later discuss the new remedial cleanup Alternative Remedial Contracts Strategy (ARCS) contracts.

Second, why depend on contracting to such a great extent?

The dependence on contracting is an outcome of both congressional and EPA decisions in the early 1980s. Originally, there was general agreement that Superfund had to be implemented quickly and would be only a short-term program and that the necessary technical expertise existed in the private sector. Therefore, heavy reliance on contractors seemed to make economic and environmental sense. But we now know that Superfund will be needed for many decades. And it has become clear that the technical difficulties in cleaning up many different types of chemically contaminated sites were--and to some extent remain--quite

Figure 1
Superfund Program
Contracting v. Internal Staff Funding



Source: OTA, from EPA's direct obligations budget, as submitted annually to Congress. The amounts on this figure are a subset of those in table 1.

novel compared to past environmental efforts, such as applying air and water pollution control technologies at industrial facilities.

Moreover, the rapid growth of the national cleanup effort, both in Superfund and many other cleanup programs, has meant that technical experience and expertise in the private sector has likely been spread very thin. Before Superfund, there were probably only a few hundred technical people working on cleanups. Now there are probably about 20,000 technicians, engineers, and scientists. Currently, there are not enough appropriately trained and experienced engineers and scientists to implement a high quality and expanding national cleanup program. Moreover, there has been a steady drain of people with experience and expertise away from government to contractors that compromises the environmental performance of Superfund because it makes it harder for EPA to supervise contractors adequately. For example, EPA's Region 2 told OTA that, because of two new, large contracts, they expect to lose 20 percent of their technical staff. All of this suggests that it is now time for Congress to reexamine the

use and management of contractors in Superfund.

Third, is this degree of dependence on contractors appropriate?

Superfund could not exist without contractors. The issue is how much they do, how the government manages them, and whether contract work is consistent with traditional views on what should be contracted out. For example, developing policies and regulations and providing management and oversight seem the least appropriate activities for contracting out, but contractors do a lot of work in these areas for Superfund that seem to go far beyond supportive information and analysis. (Policy, program, and analytic support contracts total about \$75 million over 1987 to 1991.) Government workers hold on to official decisionmaking. But, **the mobility, limited experience, and high workload of the government workforce can cause a subtle shift from control and use of contractor expertise and services to dependence on them (and may well have already done so).**

BOX A.--Excerpts from an EPA Contractor Study

“RPMs [Remedial Project Managers] are dedicated, enthusiastic, and energetic, but they feel burdened by their intense site responsibilities, and are aware of a wide gap between their level of skills and knowledge and the requirements of the job. RPMs suggest they lack the resources and support needed to adequately represent and defend EPA’s position at the site specific level. They indicate tremendous frustration in that they perceive they, alone, are responsible for critical and costly site decisions. They blame this frustration, along with their low pay (relative to that of private contractors), for the high turnover rates in the RPM position. Provision of technical support and assistance, particularly in the form of standards, guidelines and techniques, is crucial for bridging the gap between RPMs’ skills and technical knowledge and their job requirements.”

“While RPMs report extensive reliance on EPA contractors for providing TA/TS, [technical assistance/technical support] they are often uncertain about the quality of the contractors’ work and the appropriateness of the contractors’ suggestions and would like guidance from EPA in these cases.”

“... Of the [EPA] scientists in this group some indicate that when problems with technology transfer occur, it is because the RPM lacks the expertise needed to interpret their materials. As one [EPA] lab scientist expressed it: ‘You expect a certain level of expertise and you find it’s just not there.’”

“... Many of the RPMs believe that the PRPs [potentially responsible parties] often seek the least expensive, rather than the best, clean-up techniques and are willing to expend considerable amounts of money in attempts to establish justification for the less expensive clean-up procedures.”

Two statements attributed to RPMs by the study are:

- “The best and the brightest are working for the PRPs.”
- “One of my PRPs has a contract with the best geologist in the state . . . so I’m going against that person . . . I don’t have the resources to come back against some of their comments and concerns.”

Source: U.S. Environmental Protection Agency, *Outreach Initiative on Superfund Remedial Investigation/Feasibility Study (RI/FS)*, contractor report prepared by Barri A. Braddy and Judy A. Honey, Research Triangle Institute, Summer 1988.

Indeed, some contractor activities seem to be activities that the Office of Management and Budget has described as inappropriate for contracting out because they are “inherently governmental” and “require either the exercise of discretion in applying Government authority or the use of value judgement in making decisions for the Government.”⁴ At the other end of the spectrum, testing at sites (e.g., to measure contamination and delineate the hydrogeology) and the actual physical cleanup work appear to be the most appropriate activities for contracting out.

Fourth, does this degree of dependence on contracting reduce environmental effectiveness?

Because of poor quality technical work, this high dependence on contracting is proving to be at odds with the environmental mission of the program (i.e. timely, permanent, and complete cleanups) and desires for a cost-effective program. OTA’s work and that by the General Accounting Office and EPA’s Inspector General provide evidence of poor environmental performance in Superfund. For example, OTA’s June 1988 report *Are We Cleaning Up? 10 Superfund Case Studies* found “that Superfund remains largely ineffective and inefficient.” More recently GAO concluded that “Programs to ... clean up waste from old, inactive waste sites have not been well managed.”⁵ Among those forces which can jeopardize the quality of contractor work are:

- . the lack of development of internal EPA expertise, which results in poor contract management and oversight;
- more interest in controlling contractor costs than concern about the environmental performance of contractors;
- . a mobile workforce whose perspective on

quality, needs, and accountability can shift as it moves from the government--a purchaser of services--to and among contractors--a seller of services; and

- conflicts of interest that arise because working for the government may affect future work in the private sector.

Fifth, is the dependence on contracting cost effective?

There is no *data* which proves whether so much contracting, covering so many different activities, is cost effective or not. A detailed independent study would be useful, especially in light of growing concerns about how much cleanups are costing, questions about whether Superfund is needed, and interest in having more cleanups done by responsible parties. Such a study should be conducted by an independent group, because the contracting industry has become a constituency benefiting from a large Superfund program. (Many firms active in the cleanup business have had increases of several hundred percent in revenues and even larger increases in net incomes over the past five years.)

Definitive information may not exist about the cost effectiveness of Superfund contracting, but some trends are clear. First, because demand for cleanup services has grown faster than supply, the government will face increasing costs resulting from inefficiencies (e.g., poorly done work which must be repeated). Also, many people are leaving EPA for higher salaries and better working conditions as contractors. And prime contractors are paid for supervising subcontractors. Thus, **with the explosive growth in demand for talent and services outstripping supply, how can the current high spending levels on contractors be the most cost-effective policy?**

⁴ Office of Management and Budget, Circular A-76 (revised), Aug. 4, 1983.

⁵ U.S. Congress, General Accounting Office, Environmental Protection Agency Issues Transition Series, GAO/OCG-89-20TR (Gaithersburg, MD: General Accounting Office, November 1988).

There is another point to consider. Compared to cleanups managed by responsible parties, EPA probably pays lower unit costs (lower average hourly costs and lower profit margins), but other factors, leading to low efficiency and low contractor productivity, transform low unit costs into high total costs. Constant changes escalate costs; for example, high turnover of Remedial Project Managers, demands for more extensive documentation, changing government policies affecting the analysis and selection of sites and cleanups, and changing of contractors with significant repeating of work. Also, because of regulatory, enforcement, and litigation concerns, government contractors are likely to rely more heavily on expensive worker protection equipment and quality controls for data than contractors working on private cleanups. From looking at actual costs and speaking to contractors and companies which also use contractors for their private cleanups, OTA concludes that it is not uncommon for the government to spend from 100 to 500 percent more than a private client would spend to accomplish the same site study or cleanup. A clearer understanding of how much of this higher cost buys a better cleanup and how much does not would be very useful, particularly from the perspective, shared by many people, that more cleanups ought to be done by the responsible parties, with oversight by government. More enforcement and settlements and more cleanups by industry, however, mean more demands on EPA staff and more demand for workers by contractors.

Future Directions

There are no easy or quick solutions to these problems. Contractors in Superfund and the other Federal cleanup programs will remain necessary. It seems clear, however, that if Congress wants to achieve major improvements in Superfund it will benefit from

rethinking the role of contractors. Doing so also means addressing EPA's Superfund workforce and is, therefore, integral to strengthening EPA's Superfund program.

Simply pouring more money into Superfund and placing more emphasis on enforcement and privately financed cleanups would not necessarily improve the environmental performance of the system. Without addressing how EPA uses, selects, and supervises contractors, these actions--like so many cleanups we have examined--are likely to prove an impermanent solution to what we believe are the core problems of poor environmental performance and low cost effectiveness in Superfund.

Some opportunities for congressional examination are:

1. Reducing the Dependence on Contractors

For a long-term Superfund program, should some current contractor activities be shifted totally or in part to the government? Answering this question means assessing what tasks make sense for a permanent Federal cleanup program and deciding what funding and government personnel instead of contractors are needed to perform these tasks. The analysis of policies and creation of policy options, evaluation of contractor and EPA regional performance, development of implementation plans for new policies and technical guidance, communication with communities, maintenance of data bases and hot lines, evaluating new technologies and operating technology transfer programs, decisions on need for and extent of cleanup, and using data from contractors to prepare key decision documents (e.g., Records of Decision) and reports to Congress seem to be the kinds of activities which government workers could perform *directly*.

More significant than a shift *in spending* from contractors to EPA, which would still

be small compared to total spending on contractors, would be the shift *in responsibility* from contractors to **EPA**. Even in highly technical areas, most amenable to using contractors, there would be substantial benefit from *having a small portion* of the work done by government workers. Only in this way, by directly doing technical work, will government workers truly learn the most important technical aspects of the program.

Reducing dependence on contractors requires addressing workforce issues in EPA, such as the number, experience level, compensation, morale, and technical support systems (i.e., databases, access to technical advice, and continued education) for government professionals. To make key, *independent* technical decisions government workers need to understand site contamination and risks, cleanups, and contractor work. The government needs to devise a detailed plan, inevitably meaning some higher costs (see option 3), to attract and keep the best and most experienced technical specialists and program managers. Otherwise, contractors will lure them away with higher salaries and other inducements.

2. Improving Government Management of Contractors

How can people in EPA regional offices, where most Superfund implementation will always occur, exercise tighter management, quality control, and reviews of contractor activities done directly for the government and for PRPs? Doing so requires more technical people in site project management closely monitoring the substance of contractor

work. At EPA headquarters, technical staff with regional experience could independently monitor ongoing regional contractor activities. Early checks for consistency and technical quality are critical to improve the efficiency and effectiveness of Superfund. This need increases as the Superfund program moves toward spending more of its money on site cleanups, which cost much more than site studies. This too means addressing the recruitment and retention of EPA's technical professionals to strengthen the program.

3. Shifting Superfund Spending

Can government bring demand for talent and services back into better balance with supply?⁶ To improve the near- and long-term environmental performance of the program, Congress can consider **temporarily decreasing, for perhaps five years, annual Superfund spending for contractors by 30 percent to 50 percent (roughly \$400 million to \$600 million per year)**. In the longer term, however, there may well be need for increased spending for contractors. But long-term performance could be improved if, in the near term, money was made available for increasing *government* staff to strengthen EPA's Superfund program by addressing the previous two options.⁷ Indeed, improving environmental performance by cutting contractor spending *requires* improving and expanding EPA's workforce. Moreover, for improving the *king-term* national cleanup program, other important ways to use some of the money diverted from contractors in the near term include:

⁶ The amount cut from contractor spending would be about 10 times greater than the increase for internal EPA spending to address the previous two options. The impact on the consulting **industry** would be mitigated by the expected increases during the next five years in the cleanup area by other **Federal** cleanup programs, States, and private **industry**. Conversely, the current demand/supply imbalance could get worse if Superfund spending remained constant (or increased) and if there was a marked increase in enforcement which caused more responsible party cleanups.

⁷ Increasing just money would not be sufficient. **To increase both the size and the quality of the workforce**, the number of allowable full-time equivalents (**FTEs**) in EPA headquarters and each region would also have to be raised, and the average pay level per **FTE** would have to increase, ultimately raising the average pay levels in the program. The increase in numbers of government staff would be much smaller than the decrease in contractor **workforce**. This difference would help cause some shift of people to EPA if working conditions at EPA are also improved.

- substantial increases in government R&D and support of private sector R&D to provide more cost-effective cleanup technologies for particularly difficult sites, like large landfills, and to reduce long-term program costs;
- support for educational programs to train and increase the engineering and scientific workforce for increased contractor activities in the future;
- more support for basic research on health effects of hazardous substances to support more accurate risk assessments; and
- more money for assessing how many sites require cleanup.

4. Rethinking Cleanup Priorities

Public support for option 3 critically requires confidence that environmental protection will not suffer. **Reexamining Superfund's priorities means understanding what kinds of current high cost contractor activities could be postponed without threatening public health and environment, versus those which truly are necessary to address urgent site problems.** Establishing better defined and more clearly understood priorities for Superfund merits much more attention for its own sake but especially if shifts in spending are considered and if more private party cleanups are sought. For example, some site cleanups are being justified on the basis of speculative future uses of land or water and hypothesized future risky exposures to hazardous substances. (This is one of a number of issues to be discussed in the full report of this assessment.) In contrast, other sites pose sig-

nificant risks to people under present conditions. And for many sites in the former category, costly cleanups involve permanent remedies because permanent ones are not yet available. Would waiting to clean up sites which do not pose reasonably certain *present* dangers make sense? (See OTA's 1985 report *Superfund Strategy*.)

5. Increasing Inspector General Activities

Provide increased resources for substantially more auditing and investigation by the EPA's Inspector General office of contractor activities. John C. Martin, EPA's Inspector General, recently said:

Our Superfund resources have not kept pace with the increasing size and complexity of the program and the new mandatory requirements imposed upon us by SARA. We have had to defer audit coverage of many significant aspects of EPA management of Superfund in order to fulfill statutory requirements and provide audit support for burgeoning Superfund procurement. **Superfund is particularly sensitive to fraud, waste and abuse**, requiring a substantial investment in training and the development of new audit and investigative approaches [emphasis added].⁸

These and other options will be discussed further in the full report, due later this year.

⁸ U.S. Environmental Protection Agency, Office of Inspector General, Annual Superfund Report to the Congress for Fiscal Year 1987, September 1988.