CBO TESTIMONY

Statement of
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before the
Subcommittee on Investigations and Oversight
Committee on Public Works and Transportation
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NOTICE

This statement is not available for public release until it is delivered at 10:00 a.m. (EST), Tuesday, October 29, 1991.

CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
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Mr. Chairman and Members of the Subcommittee, thank you for inviting me to participate in your review of the Superfund program, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (CERCLA), and the Superfund Amendment and Reauthorization Act of 1986. In my view, these hearings are timely and welcome. We have had more than 10 years to see the program in action. The comprehensive hearings you have called for can lead to a productive dialogue about the current program and provide the basis for an informed reauthorization process when current legislation expires. I have organized my testimony around four questions:

- What are the important features of the Superfund program that contribute to the outcomes we observe today?

- What were some of the start-up problems the program faced?

- What has been accomplished under the program to date in terms of sites addressed, outlays, enforcement activities, and cost recovery?

- What has been the effect of changes in the Superfund program, especially those introduced in the last two years following the Environmental Protection Agency (EPA) "90-Day Study"?

The analysis of the Congressional Budget Office (CBO) leads me to the following conclusions and observations:

- It is expensive and time-consuming to go through the Superfund process. While in some areas the process may be amenable to improvement, the program's current structure adds to the expense and time required to complete activities at sites.

- The current scheme for determining liability and assigning costs plays a central role in the overall character of the program. The legal and administrative procedures have set off a chain of events that extend well beyond EPA and the parties it initially names. Recognition of these interactions is central to understanding both the accomplishments and the costs of the program.

- Superfund is complex in terms of its technical challenges, the science underlying it, and the characteristics of the individual sites. Differences among the sites are an important factor in determining the cost and pace of activities.

- The program is administratively complex, and there have been a number of shifts in policies through the years. These shifts have contributed to the uncertainty within EPA and the private sector regarding those policies.

- A number of administrative reforms have been carried out since 1989, including the shift to an "enforcement first" strategy, in response to criticisms raised during the program's first eight years. Starting in fiscal year 1989, EPA data show a major increase in the value of cleanup settlements with private parties: agreements totaling over $1 billion have been reached in each of the last three years, equaling or exceeding the cumulative total from 1981 through 1988. The use of unilateral administrative orders for remedial cleanup reached a new high in 1991; conversely, no distinct de minimis settlements were reached in that year and only 14 were reached in 1990.

- "Enforcement first" and the other 1989 reforms have not resulted in visible improvements in the pace of program activities. Since October 1989, the average length of a completed remedial investigation/feasibility study (RI/FS) has increased 14 months; the average length of a remedial design (RD) has increased 3

months; and the average length of a remedial action (RA) has increased 7 months.

- Recent EPA experience suggests an average of seven to eight years between discovery of a site and final NPL listing, and a total of almost seven years for the three main phases of remedial study and activity (which may occur more than once at a site). If these figures hold for sites now entering the pipeline, it will take an average of 15 years or more from discovery to the completion of construction--and much longer, in some case, to reach the remediation goals. With the number of sites awaiting NPL listing, and perhaps even discovery, present trends indicate that the public and private sectors will be dealing with Superfund for several decades.

Superfund is a major environmental program, with budget implications large enough to justify substantial attention from CBO. The program was appropriated more than $1.6 billion in fiscal year 1991, making a total of almost $8.9 billion over the first 10 years. Total federal spending, whether funded by general revenues, dedicated taxes, or costs recovered from private parties, will be substantial for years, if not decades, to come. Moreover, related federal programs and outlays may be affected by the policies and

precedents established under the Superfund legislation, including restoration and cleanup activities at facilities owned by the Department of Defense, the Department of Energy, and a variety of other federal agencies. The federal program can also exert leverage on state and local expenditures through its activities and its precedents.

Previous work by CBO staff on the subject can be found in *Federal Liabilities Under Hazardous Waste Laws,* a study published in May 1990. My own research before joining CBO this summer focused on Superfund for the last four years and included the report *Understanding Superfund: A Progress Report,* published by RAND in September 1989.

CBO is currently studying restoration activities at Defense Department facilities, and also the enforcement provisions of Superfund. We expect these studies to be completed next year. Finally, CBO has just published a study on federal options with respect to recycling and waste disposal.

KEY FEATURES OF SUPERFUND THAT CONTRIBUTE TO THE OBSERVED OUTCOMES

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) was an innovative use of liability law to accomplish the

public objective of cleaning up closed and abandoned hazardous sites that present a threat to human health or the environment.[1] An overview of the administrative and legal stages in the process will help to interpret the measures of accomplishment and to clarify the sources of difficulties in the program.

The Superfund process sets off a lengthy sequence of events that extend well beyond EPA. In a typical sequence, a Superfund site will pass through 10 stages of investigation and remediation: (1) EPA must become aware of the site for it to enter the inventory and be eligible for federal expenditure.[2] Typically, entry into the inventory occurs upon voluntary listing, an accidental release, or a complaint from someone in the locality. (2) A preliminary assessment (PA) determines whether any further investigation or action is appropriate; the preliminary assessment may involve a review of records concerning the site's use, and perhaps a drive-by inspection. (3) A fraction of the sites then receive a more detailed site investigation (SI), which may include drilling of test wells and other physical sampling. (4) The resulting information is used to rank the site according to the Hazard Ranking System (HRS); sites with scores above a certain value are placed on the preliminary National

1. The term "Superfund" is used to refer to CERCLA as well as to the program that implements the act.

2. The inventory is contained in CERCLIS, the Comprehensive Environmental Response, Compensation, and Liability Information System.

Priorities List. (5) Final NPL listing is made in the Federal Register; this makes it a "Superfund site" and allows the Environmental Protection Agency to recover expenses from responsible parties. (6) A detailed remedial investigation/feasibility study (RI/FS) examines the physical characteristics of the site, the substances it contains, and evidence of off-site migration of contaminants. The feasibility study considers alternative remedies that might be used, and makes rough calculations of expected cost. (7) The culmination of this process is a record of decision (ROD), approved by the EPA regional administrator. The ROD is a watershed event that starts the process of permanent remedial activities. (8) The remedial design (RD) is a detailed engineering-construction process for accomplishing the steps approved in the ROD. (9) Remedial action (RA) includes construction and operation-and-maintenance activities during the remediation. (10) The final steps in the process are often designated "cleanup complete," "proposed delisting," and "delisting" from the National Priorities List.

Alongside these investigation and remediation activities, a parallel set of steps addresses administrative, legal, financial, and liability issues. Some of these steps are initiated by EPA and others by private legal or voluntary action. The combinations of actions that can be taken vary, but in simplified form we can describe some key features. EPA can choose to handle a site as a "fund lead" or "enforcement lead" site. At a fund lead site, the Superfund

trust fund resources are used to finance site activities, and EPA may later seek reimbursement for part or all of these outlays from private parties. At an enforcement lead site, EPA names one or more potentially responsible party (PRP) and seeks to have the PRP pay part or all of the expenses, or to take over responsibility for completing the activities. EPA can use administrative orders or lawsuits to achieve these goals.

Typically, EPA names some, but not all, of the parties that may have had some involvement with wastes at a site. These PRPs typically name other PRPs under the legal doctrine of joint and several liability underlying Superfund. Some of the PRPs in turn appeal to their insurance carriers for coverage of expenses involved in litigation, investigation, or remediation. The important consequence of this liability-based approach is that the EPA action against the first-named PRPs is only a part of the total legal and financial activity.

The PRPs brought into the process often differ importantly in such characteristics as their volumetric contribution to the site, their financial viability (and hence ability to fund remedies), their experience with the Superfund process, their willingness to assume responsibility for carrying out the remedy, and their insurance coverage. This heterogeneity among PRPs may affect the pace and costliness of activities at a Superfund site. A

heterogeneous set of PRPs may force EPA to devote more time and resources to resolving technical and financial issues. Some PRPs may have strong incentives to litigate vigorously, while others may be able and willing to negotiate settlements and conclude the process expeditiously.

START-UP PROBLEMS IN THE PROGRAM

Superfund faced a number of challenges and problems in its early years, which contributed to confusion and delay at the outset of the program. Some of these difficulties can be thought of as start-up problems that diminish as all parties gain experience with the program. Others may be inherent difficulties in the program that must either be accepted as part of the process or else addressed through policy and legislative changes.

Technical Novelty and Difficulties

When CERCLA was enacted in 1980, there had been very little experience in analyzing and cleaning up hazardous waste sites. Considerable progress has been made in understanding what is involved in analyzing the geology and chemistry of a site, and in understanding what techniques are successful in

dealing with them, although CBO is not in a position to evaluate whether these technical issues have been fully resolved.

Legal Novelty

In creating CERCLA, the Congress deliberately employed the liability law in an innovative fashion, and left some of the details to the courts to determine and elaborate. In particular, as interpreted by the courts, the law applies a very broad standard of liability to all parties who have ever had any involvement with a site or with the wastes found in it. The law employs the legal principles of strict, joint and several, and retroactive liability. Strict liability assigns responsibility regardless of negligence or intent. Joint and several liability means that each and every party, alone or in combination, can be made to bear the full cost (and perhaps can sue other parties in a contribution action). Retroactive liability applies to activities that may have taken place before the law was passed.

The parties potentially liable under CERCLA include waste generators, waste transporters who selected the disposal site, and site owners or operators. The courts have confirmed that current owners or operators can also be held liable for activities that took place before they entered the picture. In some

instances, the courts have also included financial institutions or governmental regulatory bodies as responsible parties.

The numbers of parties and the breadth of their exposure were subjects of vigorous litigation in CERCLA's early years. Without intending to render a legal opinion, I believe it is generally regarded as settled that the liability is strict, joint and several, and retroactive. These matters are rarely sources of significant litigation today. Further, it is generally settled that exposure can be applied to a very broad class of responsible parties, although there may be litigation on this issue by some parties at individual Superfund sites. The extent of liability by municipalities and by financial lenders is often a source of controversy at Superfund sites.

The applicability of insurance policies to Superfund and similar sites is a matter of considerable ongoing litigation. Businesses often present claims to their insurance companies under their comprehensive general liability policies when they are named in a Superfund action. Generally speaking, insurance companies have taken the position that they did not intend to cover such claims in their policies and they deny coverage, although they may provide legal representation under the "duty to defend" provision of the policies. The issue is often vigorously litigated and may be the source of significant expense to some of the private parties and to the insurance

companies. At present, various state and federal courts have ruled inconsistently on many of the relevant questions. The problem is unlikely to reach early resolution because insurance law is generally determined at the state level, and no case has yet been decided by the U.S. Supreme Court.

Administrative Challenges and Decisions

It is no secret that the program had a rocky start at EPA, with an Administrator who appeared to be reluctant to implement the program and an Assistant Administrator who was frankly obstructionist. In large part because of this poor beginning, and the lack of substantial accomplishments during the first five years of the program, when the Congress reauthorized the program in the Superfund Amendment and Reauthorization Act of 1986 (SARA) it provided a number of more detailed instructions to EPA regarding targets for numbers of activities to be accomplished by certain deadlines. These requirements undoubtedly pushed the agency to meet some deadlines more rapidly than might otherwise have occurred, but they also introduced some rigidities into the administration of the program that normally would be left to agency discretion.[3]

3. One of the Congressmen closely associated with both CERCLA and SARA reflected on this detailed micromanagement by the Congress through the legislative process. He observes that many of these legislative provisions are, in general, better left to administrative discretion, but

During the entire period of CERCLA and SARA, there have been a number shifts in program emphasis (for example, in types of remedies selected and between fund lead or enforcement lead) as well as variation across EPA regions and individual Superfund sites. In addition, the balance of responsibility for determining details of implementation has alternated between EPA headquarters and regional offices.

Early in 1989, Administrator William Reilly launched a review of the Superfund program, and subsequently carried out a number of administrative and programmatic changes. These are reflected in the EPA report *A Management Review of the Superfund Program*, released in June 1989--the so-called 90-Day Study. The report calls for increased emphasis on dealing with acute threats more quickly, cleaning up the worst sites first, and using the available enforcement provisions in an "enforcement first" strategy. These and related program reforms have been in place for approximately two years, and in the summary measures of program activity presented below I will try to identify any changes in outcomes that seem to have occurred.

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argues that the Congress is unlikely to relax them until there is clear indication that EPA is making a good faith effort to implement the Congressional intent. See J. J. Florio, "Congress as Reluctant Regulator: Hazardous Waste Policy in the 1980's," Yale Journal of Regulation, vol. 3, no. 2 (1986), pp. 351-382.

SUPERFUND ACCOMPLISHMENTS AND RECENT PROGRESS

EPA has been notified of a large number of hazardous sites, larger than many observers expected when CERCLA was passed in 1980, and has done enough preliminary investigation to eliminate more than half of them from future consideration. Of the 1,223 sites identified as the worst waste hazards, however, fewer than 3 percent have been fully cleaned up. Given the number of sites currently in the pipeline, we can expect that the federal government and private parties will be dealing with these sites for a long time to come.

As of the end of June 1991, 34,652 sites had been entered in EPA's information system, CERCLIS, for consideration as possible Superfund sites. Of these, 18,337, or 53 percent, have been evaluated by EPA and found not to warrant inclusion on the National Priorities List, while 1,223 (3.5 percent) have been placed on the proposed or final NPL. The roughly 44 percent of sites remaining break down as follows:

- 2,684 sites (8 percent) awaiting the first-stage Preliminary Assessment;

- 5,181 sites (15 percent) awaiting the more detailed Site Inspection; and

- 7,228 sites (21 percent) awaiting scoring by the Hazard Ranking System.

The inventory as a whole grew 8.5 percent between fiscal year 1989, when CERCLIS contained 31,932 sites, and the end of June 1991. Completed evaluations increased by 5.2 percent in that period. The share of sites awaiting further evaluation rose two percentage points to 43.6 percent.

Measuring progress at sites once they have been placed on the NPL is more difficult. EPA's index of the number of sites that have reached a given NPL stage has two important limitations for this purpose. First, if the cleanup effort at a site is divided into more than one "operable unit," different parts or aspects of the site may be in different stages simultaneously. EPA generally classifies each site according to the component that has reached the most advanced stage, even if the majority of activities at the site are at an earlier stage. Second, a site that has reached a given stage in the process may return to an earlier stage as a result of a further evaluation or new information. For example, some of the sites reported as having started a remedial design (RD) may be undergoing a second remedial investigation/feasibility study at a given time. These ambiguities can make interpreting and comparing Superfund pipeline statistics difficult.

According to a recent Superfund Management Report chart, 7 percent of sites on the NPL were awaiting RI/FS as of June 30, 1991; 40 percent had an RI/FS study under way; 8 percent had a remedy selected; 9 percent had an RD under way; 25 percent had remedial action under way; and 5 percent had completed all construction activity. This chart leaves 72 sites, or 6 percent of the total, unaccounted for.

This distribution of sites across the NPL stages is illustrated in Figure 1 on page 29, which also shows the pipeline as of September 30, 1989, for comparison. The figure shows a significant fall in the number of sites awaiting RI/FS start--although the distribution of the sites "unaccounted for" may affect this conclusion--and an increase in the number where an RA is under way. (Note that the size of the proposed-plus-final NPL, including cleaned-up "delisted" sites, fell from 1,253 to 1,223 during this period, because a number of sites dropped from the proposed list.) Again, however, this apparent progress is difficult to evaluate, because it reflects the status of only the most advanced operable unit at each site.

Available data on the number of ongoing remedial "projects," which correspond more closely to the activities at operable units, are summarized in Figure 2 on page 30. As of June 30, 1991, 915 investigation and feasibility studies, 355 remedial designs, and 285 remedial actions were listed as ongoing.

From the comparable figures of 673 RI/FSs, 264 RDs, and 219 RAs 21 months earlier, the implied growth rates are 36 percent, 34 percent, and 30 percent respectively. The high growth rates suggest good progress in moving sites through the pipeline, but may partly reflect a greater tendency to divide sites into multiple operable units. A thorough analysis would require data on the number of operable units at which an RI/FS has yet to occur.

"Removal actions"--including emergency removals of immediate threats (such as a spill or abandoned drain) and limited, non-permanent remedies (such as draining a surface lagoon)--are another important component of the Superfund program. As of June 30, 1991, 456 NPL sites and 1,617 non-NPL sites have seen the start of at least one removal action since the inception of the Superfund program. One or more removals have been completed at 255 NPL and 994 other sites. Counting multiple actions at the same site, a total of 2,590 removal starts have occurred at all sites combined, and 2,097 have been completed, representing increases of 31 percent and 34 percent respectively over the corresponding figures for September 30, 1989.

Accompanying these increases in remedial and removal projects has been an acceleration of federal spending on Superfund. According to the Office of Management and Budget (OMB) figures, the $3.1 billion appropriated for the program over fiscal years 1990 and 1991 represent 55

percent of the total (in nominal dollars) appropriated over the preceding nine years.

Pipeline Size and Projected Completions

EPA Administrator Reilly has set targets requiring the agency to double the number of sites at which all construction work is complete--presently 63--by the end of fiscal year 1992, triple it by the end of 1993, and raise it to about 650 by the year 2000.

From one perspective, meeting these targets would represent a major improvement over the results from the program's first decade, and would be particularly impressive given the likely increasing complexity of the average site in the pipeline as smaller, simpler sites reach completion. From another viewpoint, the target for the year 2000 would still leave at least 573 present NPL sites on the list, with construction work incomplete, nine years from now. At least 412 would be sites at which remedial study or cleanup (RI/FS, RD, or RA) had already begun when this pledge was made in October 1991. These figures raise the question of whether the announced targets have been set according to physical and technical constraints on remedial processes, or according to budgetary and staffing limits.

Enforcement

In the last three years, EPA data show significant increases in the share of remedial activities undertaken by private parties. The shift is most pronounced in the case of remedial designs: responsible parties took the lead for RDs in 38 percent of the cases at nonfederal sites up through fiscal year 1988, but 63 percent in 1989, 62 percent in 1990, and 70 percent in the first three quarters of 1991. For remedial actions, responsible-party leads account for 31 percent of the total up through 1988, 43 percent in 1989, 57 percent in 1990, and 62 percent through June 1991.[4] In the case of RI/FSs, responsible-party leads have risen from 26 percent of the pre-1989 total to 53 percent since then. Removals remain primarily a Fund-led endeavor, with private parties undertaking them in 30 percent of the cases since 1989.

Again, since these statistics on private-party involvement use projects as the unit of analysis, their interpretation is made more difficult by the growing use of "operable units" as subdivisions of a site's cleanup effort. To the extent that a positive correlation exists between the presence of viable and cooperative potentially responsible parties at a site and the number of its

4. The 1990 ratio is above 60 percent, as EPA has claimed, if agreements reached with federal agencies to conduct cleanups at federal facilities are counted as responsible-party leads.

operable units, the above figures exaggerate the growth in PRP activity. Conversely, a negative correlation would imply that the figures understate the growth.

An alternative measure of private-party involvement is the estimated value of work to be performed by PRPs. This index shows a large increase beginning in fiscal year 1989: the estimated value of all settlements reached in the 1981-1988 period was $1.03 billion (in nominal dollars), a figure that has been matched or exceeded in each of the subsequent three years. In 1989 and 1990, EPA valued its settlements with PRPs at $1.02 billion and $1.31 billion respectively; partial 1991 figures show an estimate for RD/RA settlements of $1.12 billion, which would be higher if it included removals and RI/FSs.

In addition to achieving PRP takeover, the enforcement program seeks to recover Fund expenditures from viable responsible parties. To date, the best fiscal year for cost-recovery settlements at nonfederal sites was 1988, when 163 agreements with a total value of $127.5 million were reached. More recently, nominal dollar recoveries amounted to $120 million in 1989, $87 million in 1990, and $51 million in the first three quarters of 1991.

Figure 3 on page 31 illustrates one measure of the dollar value of the post-SARA enforcement effort: the cumulative total of both the estimated

values of settlements for PRP activity and the dollar commitments obtained in cost-recovery settlements. For comparison, the figure also shows the portion accounted for by cost recoveries, and the cumulative post-SARA enforcement expenditures. Note that expenditures (which reached $158 million in 1990 and were expected to reach $209 million in 1991) exceed cost recoveries alone, but are a small fraction of the combined value of all settlements. Between 1987 and 1990, the last year for which complete data are available, EPA's estimates imply that total settlement value was 7.2 times the level of expenditures.

EPA's use of some of its enforcement tools has also grown in recent years. The growth is strongest in the case of unilateral administrative orders (UAOs): while 13 UAOs were issued for RD/RA work in fiscal year 1988, 28 were issued in 1989, 44 in 1990, and 46 in 1991.[5] In 1991, EPA also increased the cumulative number of mixed funding agreements it has signed from 8 to 12.

Although enforcement efforts at EPA seem to have increased in several dimensions just discussed, there are two areas that have seen less progress in the last two years: de minimis settlements and the use of non-binding

5. The 1988 and 1989 figures were obtained from Administrator Reilly's testimony of October 3, 1991, before the Subcommittee on Investigations and Oversight, Committee on Public Works and Transportation. An earlier EPA document, the *Report to Congress* for fiscal year 1989, gives these figures as 14 and 22, respectively (p. 8).

allocations of responsibility (NBARs). These two provisions were added to the 1986 reauthorization, SARA, and were intended to give EPA tools to speed the process and make it more economical for some of the parties. In particular, the de minimis provisions encourage EPA to settle early in the process with parties who made minor contributions to the waste hazard at a site, and to grant those parties immunity from third-party suits, so that they can "cash out" of their Superfund obligations. Fourteen de minimis settlements were reached in fiscal year 1990, bringing the total to 35, but none were added during 1991. In an NBAR, EPA goes beyond the more common practice of sharing volumetric contribution data with PRPs and suggests an actual allocation of financial responsibility; the aim is to reduce allocation arguments that would delay actual cleanup. Only one formal NBAR has been issued in the program's history.

Project Duration

According to EPA figures, the time required for completion of an RI/FS, RD, or RA has risen sharply in the latest 18 months for which data are available. Using the Superfund Management Reports. CBO has compared the average duration of activities completed by September 1989 with the duration of those

finished between October 1989 and March 1991, and found the following increases:

- from 33.0 to 47.4 months for the average Remedial Investigation and Feasibility Study;

- from 12.8 to 15.9 months for the average Remedial Design; and

- from 12.1 to 19.1 months for the typical Remedial Action.

While no individual sites or operable units passed through all three stages in the 18-month period, these averages would imply a combined increase of just over two years--from 57.9 to 82.4 months--if they were to hold steady in the future.

Similar trends are observed in the projected completion times for ongoing activities. EPA anticipated that the average RI/FS in progress at the end of fiscal year 1989 would have a total duration of 41.7 months, while the average RI/FS underway in March 1991 had lengthened to 47.5 months. The expected duration of the average remedial design under way grew from 23.3 to 32.4 months between October 1989 and March 1991, and the expected length of ongoing Remedial Actions grew from 34.6 to 43.8 months during this

18-month period. Again, summing the averages for the three stages yields an increase of two years--from 99.6 to 123.7 months.

No strong conclusions about EPA's "enforcement first" strategy and associated administrative changes can be derived from these statistics alone. March 1991 may be too early a cutoff date at which to judge the impact of these changes on average duration, particularly at later stages of the Superfund process. Moreover, the strategy may have reduced--rather than contributed to-increases in duration caused by other factors, such as movement into the pipeline of sites of greater size and complexity. What is clear is that these data do not show an improvement in completion speed during the first 18 months of the new approach.

EPA does not publish comparable data on the duration of pre-RI/FS stages before and after October 1989. Information available from February 1990 does suggest, however, that these preliminary stages may be an important source of the delays in achieving site cleanup. EPA figures indicate that the 72 sites added to the final NPL in the "Final Rule 8" round took an average of 7.5 to 8 years to move from site discovery to final listing.[6] These figures do not include the time between final NPL listing and start of an RI/FS. In

6. The EPA report lists the duration for each site as a whole number of years. If all durations are defined by rounding upward (for example, if an actual duration of 4 years and 3 days is listed as 5 years), then the actual average is probably closer to 7.5 years.

a few cases, an EPA region may choose to begin an RI/FS while the site is only on the proposed NPL; if this were the universal practice, the pre-RI/FS time for these 72 sites would still be roughly six years.[7]

CONCLUSION

With hindsight it is clear that society did not understand the dimensions of the challenge we faced in attempting to deal with closed or abandoned hazardous waste sites. They are more numerous than originally anticipated, and the geological, chemical, and technical difficulties are more significant than originally appreciated. It is now clear that many of the remedies that were selected will require decades to carry out.

The Superfund program has also presented unexpected administrative difficulties. After eight years, which included some very troubled periods, the new Administrator introduced several reforms in the summer of 1989. It may be too early to appraise them, but preliminary data suggest that these changes have been accompanied by increased use of enforcement tools and substantial increases in the dollar value of private-sector agreements to fund Superfund

7. The practice is not common; as of June 30, 1991, the NPL included 89 sites awaiting their first RI/FS (as noted earlier), but only one site awaiting final listing.

activities. At the same time, the last two years have seen a slowdown in the program at key milestones: Remedial Investigations/Feasibility Study, Remedial Design, and Remedial Action completed during the last two years took a total of 24 months longer than previously completed activities.

The legal basis for Superfund was innovative. It stressed the "polluter pays" principle and employed legal doctrines of strict, joint and several, and retroactive liability. Several of these provisions were tested in the courts in the early years of Superfund, and these key principles have been confirmed. Other legal issues involve the applicability of insurance policies to Superfund cleanup, the liability of municipalities, and the liability of financial institutions. Other issues are contentious and still very much unsettled. Furthermore, because insurance law is generally decided at the state level, insurance issues may not be resolved quickly one way or the other.

The liability provisions of Superfund, especially the joint and several provision, have led directly to considerable litigation and legal activity among potentially responsible parties, between PRPs and insurance companies, and between federal and state and local governmental agencies. It is difficult to document the magnitude of these nonfederal legal expenses, but they are likely to be significant. In any case, third-party litigation is a clearly established feature of the Superfund program.

At present, a new site entering the Superfund process faces a series of steps that may average almost eight years from the time of site discovery to listing on the National Priorities List, and then another seven years for remedial investigation and completion of the cleanup process.

Faced with a program that takes this long, and involves substantial nonremedial costs, concerned parties across a wide spectrum of interests have asked if there is a better way to proceed. CBO has not attempted to evaluate alternatives, nor to endorse any, but the Subcommittee may wish to take note of suggestions that include the following:

- Reconsidering the liability and funding mechanisms currently employed in Superfund. Alternatives commonly discussed include a no fault/public works approach, fund lead--with cost recovery at a later stage--or more extensive use of enforcement tools;

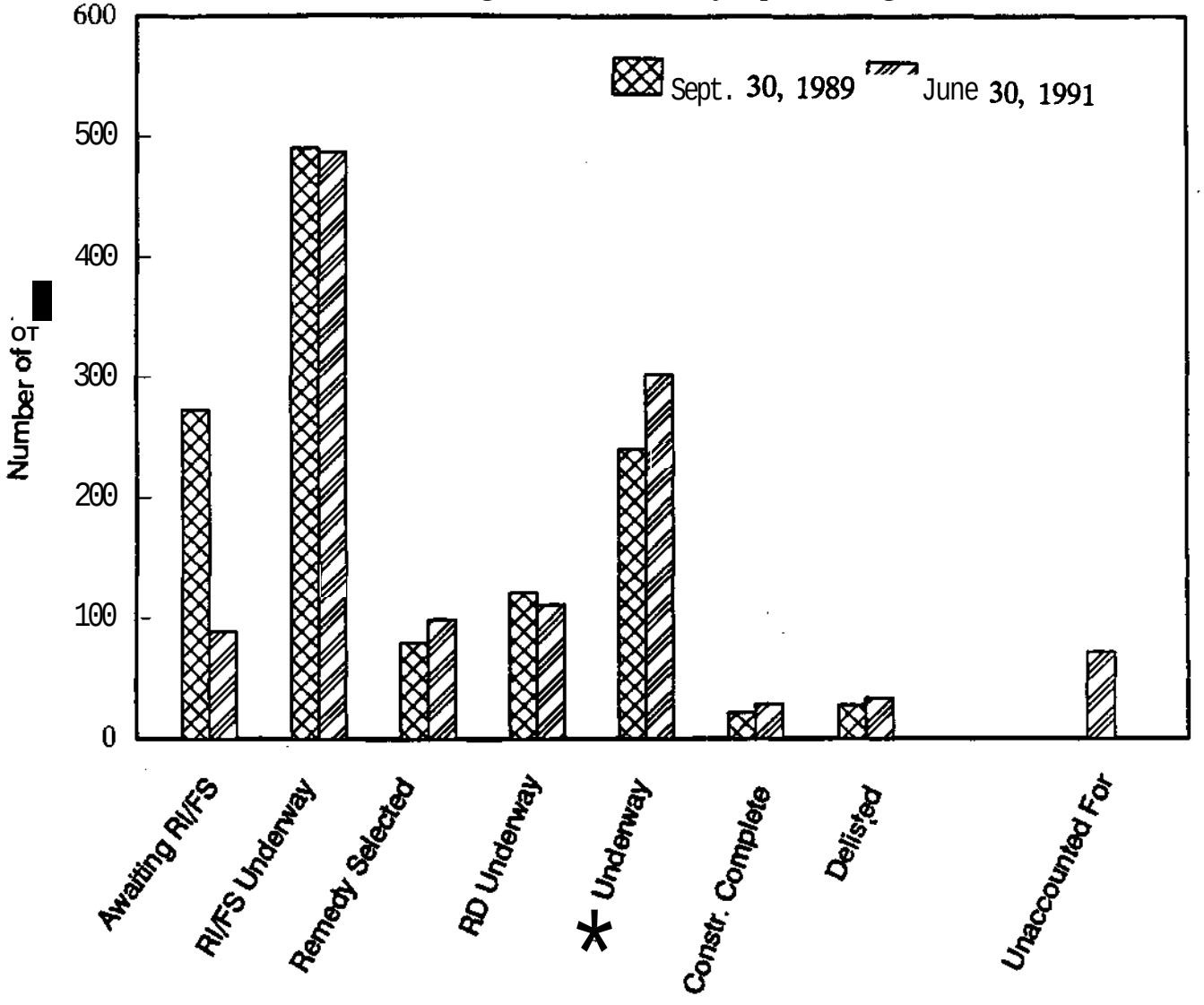
- Providing more explicit guidelines and criteria for determining risk, setting priorities, and concluding cleanup at sites. Alternatives include formally calculating risks to human health and the environment posed by sites, evaluating the costs and benefits of proposed remedies, and creating measures of

progress that can quantify reductions in risk that occur at intermediate stages of activity at Superfund sites;

- Deciding whether any groups should be exempted from liability at a Superfund site. Commonly mentioned groups include municipalities (or municipal solid waste), financial institutions, very small businesses or nonprofit organizations, or parties that acted in a then-accepted fashion before CERCLA was passed;

- Determining whether or not federal clarification of the role of insurance coverage is appropriate in the context of Superfund program activities. Alternatives include exempting all insurance, declaring that insurance covers remediation but not study and investigation, or declaring that insurance covers all phases of CERCLA-related activities.

Figure 1: NPL Sites by Pipeline Stage

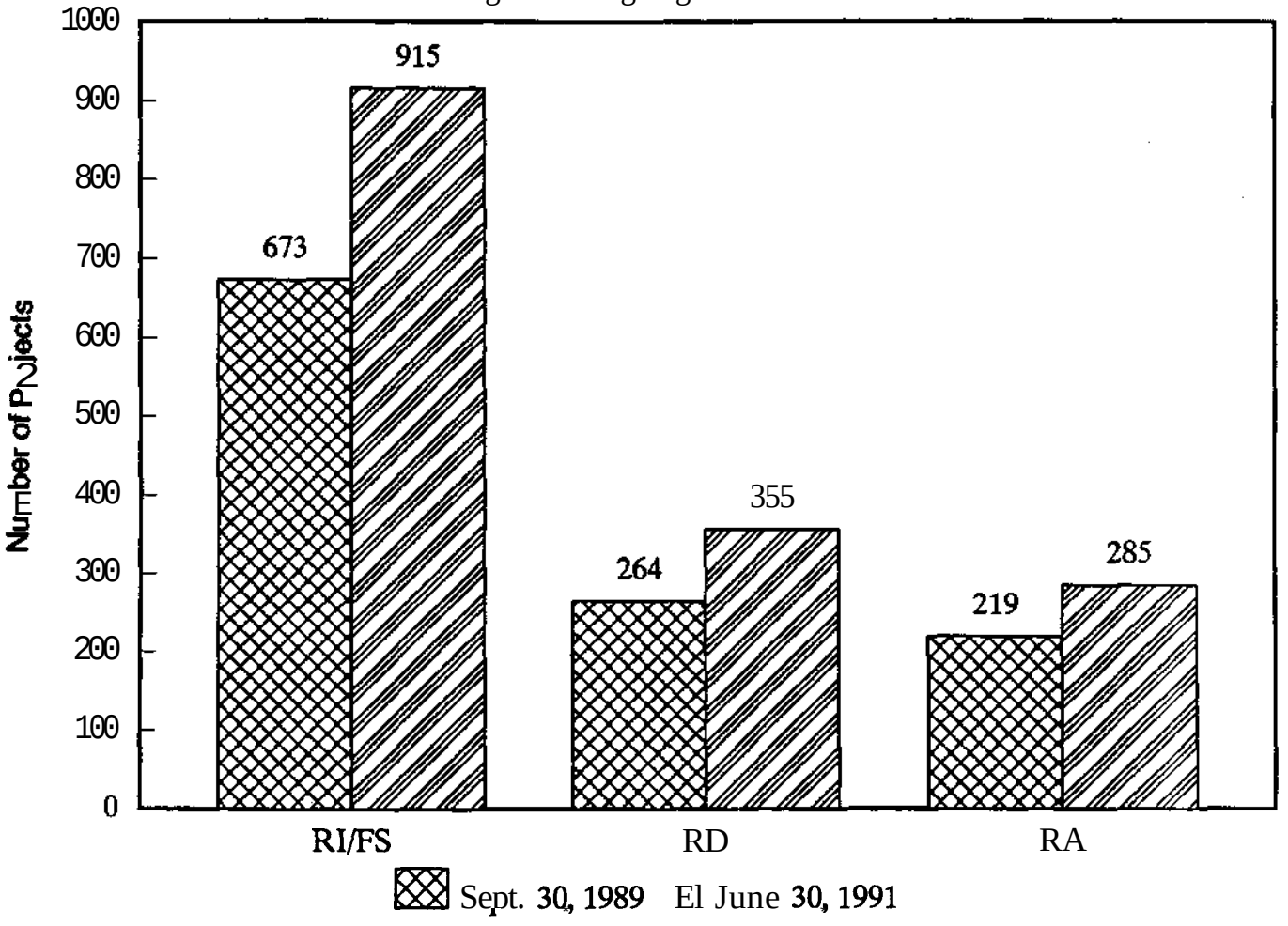


NOTE: RI/FS = Remedial Investigation/Feasibility Study

RD = Remedial Design

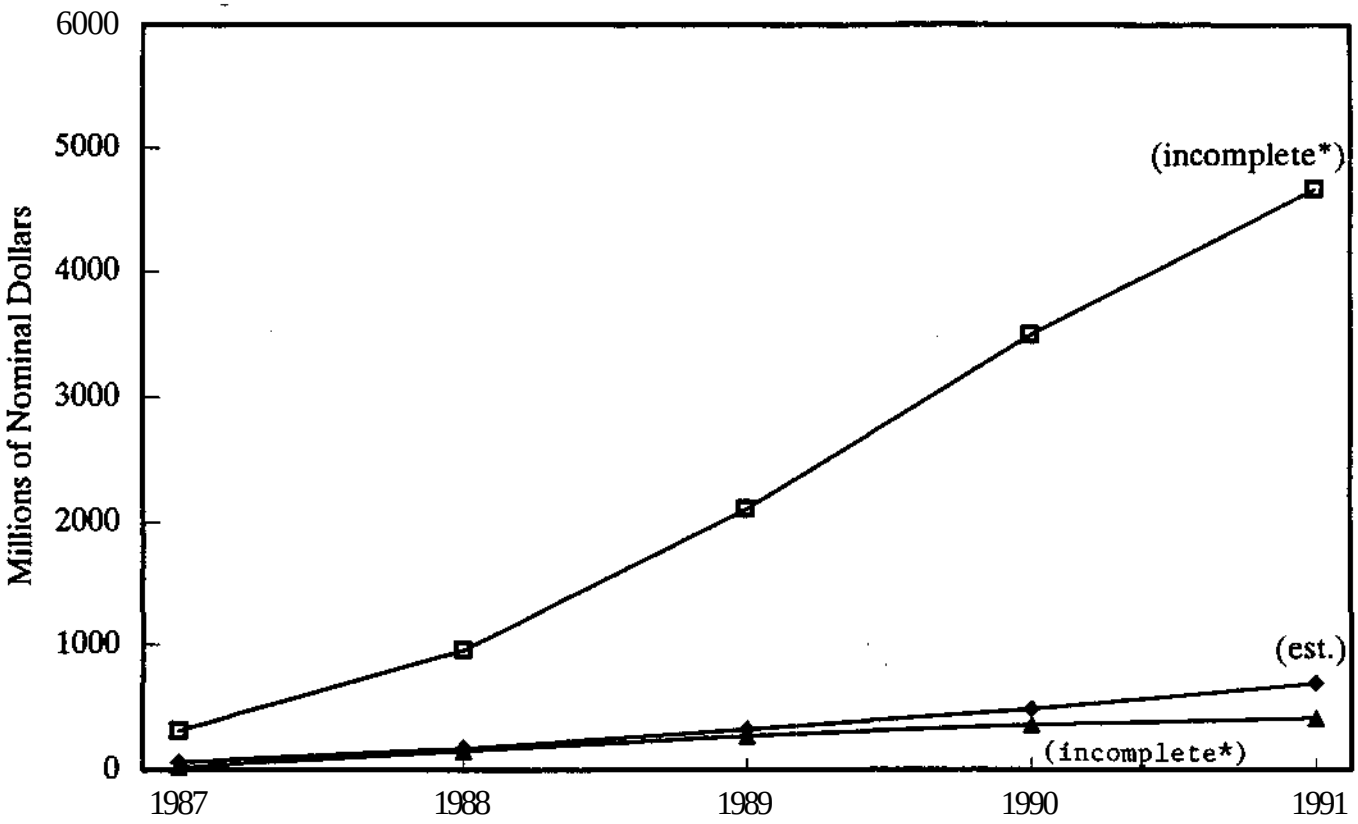
RA = Remedial Action

Figure 2: Ongoing Remedial Activities



NOTE: RI/FS = Remedial Investigation/Feasibility Study
RD = Remedial Design
RA = Remedial Action

Figure 3: Cumulative Settlements and Enforcement **Expenditures, 1987-1991**



Enforcement expenditures

Value of **cost−recovery** settlements

Total value of remediation (est.) and cost - recovery settlements

* **Fourth−quarter** settlements for **cost−recovery** and **non−RD/RA** activity not included

NOTE: RD/RA = Remedial Design/Remedial Action