

CBO TESTIMONY

Statement of
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on
Environmental Cleanup Programs
in the Departments of Defense and Energy

before the
Subcommittee on Military Procurement
and the
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Committee on National Security
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I am pleased to appear before these Subcommittees today to discuss environmental cleanup programs in the Departments of Defense (DoD) and Energy (DOE). The Congressional Budget Office (CBO) has in the past provided the Congress with assessments of environmental issues in DoD and DOE. In both agencies, environmental programs involve more than simply cleaning up waste that resulted from past actions. This testimony focuses on their cleanup activities. Before I discuss our findings, however, I need to note briefly some of the differences in the ways DoD and DOE structure their environmental activities.

The Department of Defense manages a variety of environmental programs, including the Defense Environmental Restoration Program, Environmental Compliance and Protection, Conservation, and Pollution Prevention. However, this testimony addresses only those DoD programs relating to investigating and cleaning up contaminated sites on current DoD facilities and on property formerly owned by the department.

Alternatively, although the responsibilities and activities included in DOE's Environmental Management (EM) program include environmental cleanup, they are broader and more varied than those that fall within the purview of DoD's cleanup program. Under the auspices of the EM program, DOE manages, stores, and treats huge quantities of hazardous and frequently radioactive wastes, maintains and guards large numbers of facilities that are no longer needed to produce nuclear weapons but

are awaiting decontamination, and in some cases is responsible for support functions, such as maintaining roads and utilities, at entire installations.

In March 1995, CBO testified before the House National Security Committee on the findings of our January 1995 study of DoD's environmental cleanup program. That testimony outlined three major themes that we believe still characterize DoD's cleanup program and pertain to DOE's environmental management program as well. First, the scope of these cleanup programs is enormous and continues to expand. Second, though both departments have made considerable progress in carrying out various elements of their programs, relatively little permanent cleanup of contamination has been completed. Finally, based on trends in historical costs and cost estimates, we believe that both DoD's and DOE's estimates of the total cost of their cleanup programs are still uncertain and could exhibit further growth. Of course, the eventual costs are very difficult to estimate for a host of reasons, particularly since they could depend greatly on how the Congress addresses important policy questions either through legislation or through funding levels.

Budgetary trends now suggest a fourth major theme. Just as the Department of Defense and the Department of Energy begin major efforts to actually clean up--as opposed to study--contaminated properties, funding for environmental cleanup has been decreasing and, according to departmental plans, will continue to do so in the near term. Unless major policy changes or technological breakthroughs occur, or

significant management efficiencies are realized, neither department is likely to be able to meet a number of cleanup schedules negotiated with local authorities within the shrinking budgets forecast for the future.

Adjustments to cleanup programs have already been made in the past because of fiscal constraints. Additional adjustments will probably be needed in the future to ensure that the nation's most pressing environmental cleanup needs are met within these increasingly constrained budgets.

THE SCOPE OF ENVIRONMENTAL PROGRAMS

Overall, the scope of DoD's and DOE's cleanup task remains enormous and continues to increase in size. DoD's most recent report on its cleanup effort states that at the end of fiscal year 1994, investigation or cleanup of 11,785 contaminated sites was under way or pending. That total is 11 percent higher than the number of active sites reported by the department at the end of fiscal year 1993. DoD's most badly contaminated sites, those on or proposed for the National Priorities List, also continue to grow in number--from 107 at the end of fiscal year 1993 to 122 at the end of fiscal year 1994. In addition, the number of contaminated sites requiring cleanup at formerly used defense sites (FUDS)--for which DoD is responsible for cleanup--

continues to increase. The number of FUDS requiring cleanup rose from 2,815 to 3,473 between 1993 and 1994--an increase of more than 23 percent.

New cleanup sites are added to DoD's program each year as a result of continuing investigations, including assessments of facilities to determine if requirements under the Resource Conservation and Recovery Act (RCRA) are being met and environmental surveys of closing bases to ensure that all contaminated sites have been identified. In addition, the cases of some contaminated sites previously determined by DoD to require no further action have been reopened, since regulatory authorities have not always concurred with DoD's determination and require additional study or cleanup.

The scope of DOE's cleanup requirements is also enormous. The department has identified some 10,500 individual sites with the potential for releasing hazardous material into the environment. Moreover, DOE's cleanup program--like DoD's--has been growing. The number of surplus buildings that DOE's Environmental Management office has accepted for cleanup, for example, has grown from 409 in 1989 to more than 1,200 today. DOE's cleanup problem will continue to grow for at least 10 years, as more of the department's facilities are taken out of production and transferred to the EM program for cleanup and disposal. EM expects to receive another 1,000 contaminated surplus buildings by the year 2000; eventually, the total number of such buildings could surpass 3,500.

EXTENT OF ACTUAL CLEANUP WORK

Even though DoD and DOE have accomplished a great deal of important work in locating, characterizing, and limiting the spread of contamination, neither department has completed very much of the permanent cleanup that needs to be done. At the end of fiscal year 1994, for example, DoD reported that it had completed cleanup of only 810 sites, leaving some 11,785 contaminated sites that it has determined will require further cleanup actions. Significantly, the department has yet to finish cleaning up any of its most contaminated sites--those on the National Priorities List--to justify removing them from the list. In addition, DoD has completed work on only about 265 FUDS, leaving about 3,500 sites that it has determined will require action.

Those figures are not intended to undercut the significance of the work that DoD has completed thus far. The department has determined that no further action is required on 9,640 out of 21,425 sites that it initially identified as being potentially contaminated. Of course, those "completed actions" reflect DoD's determination that no further investigation or cleanup work was required---a finding that regulatory authorities have disputed on occasion. Nevertheless, in DoD's view, almost half of the population of potentially contaminated sites in its inventory have been taken care of. Less than 10 percent of those sites, however, required any cleanup action. In addition, DoD has finished about 1,400 important interim cleanup actions needed to

stem the spread of contamination before permanent cleanup operations can be undertaken.

Other information on funding and performance indicates that DoD's cleanup work is accelerating. Beginning in fiscal year 1994, for example, DoD began to spend more on actual cleanup measures than on investigating and characterizing contamination. The department projects that the proportion of spending on cleanup versus investigation will continue to grow. The growing number of completed cleanup actions--DoD finished cleaning up 237 sites in 1994 compared with 155 sites in 1993--reflects the increased spending on cleanup.

Like DoD's, DOE's record of actual cleanup is modest. For administrative purposes, the EM program has grouped its thousands of sites into about 850 subprojects. Only about one-third of those sites have been fully characterized--the first major step in the lengthy process of environmental restoration. Of those fully characterized, only about half--or 17 percent of the total--have been cleaned up or deemed to require no further action. Thus, only 142 subprojects have been eliminated from DOE's list requiring further action. The bulk of DOE's cleanup activity remains ahead of it.

COSTS OF CLEANUP AND ENVIRONMENTAL MANAGEMENT

The third major theme CBO addressed last year concerns the increasing costs of environmental cleanup. We are concerned that DoD and DOE may still not know the full extent of what it will cost to complete their cleanup programs. It should be emphasized, however, that policy and funding decisions made by the Congress, the two departments, and other concerned parties such as the Environmental Protection Agency and state governments could have a major effect on what actual costs might be. Any estimate of total program cost will be subject to the vicissitudes of legislative and regulatory actions affecting such important variables as setting the level of cleanup standards and developing and applying new technologies. Legislative or regulatory relief that lowers cleanup standards could cut the cost of the program significantly. New remediation technologies could also cut costs dramatically.

Since 1984, DoD has spent \$18.4 billion on the Defense Environmental Restoration Program, on cleaning up military bases being closed under the decisions of the Base Realignment and Closure Commission (BRAC), and on developing new cleanup technologies.¹ Based on figures from DoD's March 1995 estimate of the cost of completing the cleanup program, beginning in 1997 it could cost about \$23 billion

1. Unless otherwise indicated, all costs in this testimony are in 1997 dollars.

to finish the cleanup. Yet DoD has completed only a small fraction of the cleanup work needed to be done. It is highly improbable, given the cost of the program to date and the amount of cleanup remaining, that DoD will be able to complete the program within that projected cost.

As DoD enters the more expensive phase of its cleanup work, however, funding for cleanup is actually decreasing. Funding for the Defense Environmental Restoration account and for BRAC cleanup is down some 30 percent---from about \$2.9 billion in 1994 to about \$2 billion in 1996. DoD's request for 1997 is about \$2 billion, or roughly the same level of funding the Congress authorized last year.

In addition, past DoD estimates of the cost of cleanup have typically underestimated the cost of the program. Ten years ago, the department estimated that the total cost of the cleanup program would be between \$15 billion and \$19 billion. CBO estimates, using DoD's figures of March 1995, that the department now projects the total cost of the cleanup program to exceed \$40 billion. DoD officials have indicated that even that estimate does not include some of the costs of management, operations, and support of long-term cleanup actions.

DoD's cost estimates for cleanup at the installation level are also subject to considerable uncertainty. For example, estimates of the cost of cleaning up bases scheduled to be closed by BRAC have increased considerably. In 1993, the DoD

Inspector General found that the median cost of cleanup for 49 bases being closed exceeded baseline estimates by about 50 percent.

Perhaps of most concern in the long run, reduced current funding for environmental research and development could mean higher future costs of remediation. The development and use of new cleanup technologies offers the prospect of reducing cleanup costs for a wide variety of contaminants below current costs. If those emerging technologies are not funded, DoD will have to pay the much higher costs of using today's technologies. Although funding for research and development of new technologies for cleanup increased dramatically between 1991 and 1994, it has fallen by about 50 percent since then.

In summary, assuming that current legislative and regulatory policies governing cleanup pertain, we believe that DoD's current estimate may still understate the probable cost of the cleanup program because it does not include important long-term costs, adequately reflect rising costs of cleanup being experienced at its installations, or consider the expanding scope of work to be done. Moreover, hopes to control costs in the future cannot be sustained in the face of shrinking funding for new technologies that could reduce the costs of cleanup.

The history of DOE's cost estimates for its cleanup program also suggests that future costs may be higher than that department now estimates. In March 1995, DOE

released its latest estimate of how much completing the cleanup of its weapons complex would cost. The uncertainty surrounding many aspects of its cleanup program resulted in a wide range of estimates--from \$180 billion to \$520 billion--reflecting differing assumptions about the standards for cleanup. Within that wide range, DOE's cost estimates would vary to a lesser extent depending on assumptions about the productivity of the EM program. DOE's only previous official estimate, published in 1988, was \$160 billion, less than half of the most comparable recent estimate of \$370 billion.

The significant increase in DOE's estimate was caused, at least in part, by the end of the Cold War and the consequent halt in weapons production at many large DOE facilities. Another contributing factor is the greater appreciation that DOE now has for the extent and nature of contamination at its facilities and the long period of time--several decades--that it will need to complete its cleanup. DOE's base-case estimate of \$240 billion and 65 years to complete its cleanup program is based on what it considers to be attainable levels of efficiency and achievable cleanup standards.

Given the many assumptions underlying DOE's recent cost estimates and the extensive period of time remaining before the program is completed, the costs of the program could continue to grow beyond DOE's current base-case estimate. In particular, the department has not included in its latest estimate the costs for cleanup

activities that are not feasible using existing technologies. DOE's estimate also assumes that sites will only have to meet cleanup standards consistent with patterns of reuse (for example, industrial rather than residential use).

Until recently, DOE's cleanup budget also reflected its growing responsibilities and the expanding scope of its program. DOE's annual budgets, expressed in 1997 dollars, have increased from \$2 billion in 1989 to about \$7 billion in 1996. Now, however, even as the department's cleanup responsibilities expand, its annual budgets are projected to decline in real terms for at least the next several years. Based on DOE's latest plan, the annual EM budget, expressed in 1997 dollars, will shrink from \$6.7 billion in 1996 to about \$4.1 billion by the turn of the century.

Those diminishing annual resources are projected for a period when the EM program not only will become responsible for more physical structures, but also will continue to be responsible for complying with additional milestones included in the agreements it has negotiated with the federal Environmental Protection Agency and state and local agencies. As with DoD, those conflicting pressures may force DOE to renegotiate some of its agreements to bring them more in line with what the department can accomplish given current fiscal constraints.

MEETING FUTURE ENVIRONMENTAL NEEDS

In light of those trends toward rising costs and shrinking budgets, DoD and DOE face a severe challenge in meeting the most pressing environmental cleanup needs within a tighter budget. Both departments have already recognized some of the key steps to do so. For example, last year CBO noted the need for DoD to establish funding priorities for its cleanup projects. The department has taken some important steps toward putting that idea into practice. First, it developed the Relative Risk Assessment Model to analyze the relative threat to public health and safety at its contaminated sites. Using that model, DoD has divided its contaminated sites into high-, medium-, and low-risk categories. According to DoD's response to Congressional budget cuts, reductions in funding would reflect the risk category and the cleanup phase of each particular site. Cuts in funding, for example, would be made initially to low- and medium-risk sites in the early investigative stages of the cleanup process. Low- and medium-risk projects in the remedial investigation/feasibility study phase would be cut back next, and so forth.

We believe DoD's approach is an important step in the right direction but could still use improvement. For example, DoD's actions using relative risk assessment and the cleanup phase concern how to cut funding, but they do not govern how the cleanup budget is constructed in the first place. Potential exists to integrate cleanup priorities among the military services as the budget request is being

constructed rather than applying criteria only when funding is being reduced. In addition, it is not clear how DoD weighs the importance of other priority factors such as cleaning up economically usable property on military bases that are closing.

As a second approach to conserving its scarce cleanup resources, DoD is successfully avoiding major near-term cleanup costs from closing military bases by transferring surplus property to other federal agencies or by leasing it. The Comprehensive Environmental Response Compensation and Liability Act (as amended) requires DoD to complete all cleanup actions before it may transfer title to a nonfederal owner. The act, however, also permits DoD to transfer property to another federal agency without completing the cleanup. According to current plans, DoD will retain or transfer to other federal agencies 110,000 out of 190,000 acres on bases being closed by BRAC I and BRAC II. About 55,000 acres are contaminated with unexploded ordnance, which the department will not have to clean up before it transfers that property to another federal agency. The Community Environmental Response Facilitation Act authorizes the department to lease property before completing cleanup. As of August 1994, DoD signed 41 leasing contracts for BRAC properties permitting reuse while it continues with planned cleanup activities. Without the option to lease, DoD would have had to complete cleanup before transferring the property to nonfederal owners for their use.

Although it may make sense to delay cleanup in certain circumstances and to avoid unnecessary costs, balancing cleanup requirements with a constrained budget will ultimately require the use of cost-effective technology. Initial research indicates that new technologies can produce major savings in long-term cleanup costs. Experimental projects, for example, suggest that the cost of cleaning up metals in contaminated groundwater could be cut from as much as \$40 to as little as 10 cents per thousand gallons. New technology could cut the cost of cleaning up unexploded ordnance by as much as a third. After increases in research and development spending were approved in 1993 and 1994, funding for research for new cleanup technology was cut drastically during the past two years. CBO continues to believe that in the long run, new cleanup technologies represent the best hope of addressing environmental problems within available budgets.

DOE's ability to meet priority cleanup requirements within increasingly constrained budgets could also be enhanced by delaying lower-priority projects that do not endanger public health or safety and by investing in new technologies. DOE estimates that new technologies could reduce its total cleanup cost over the next 65 years significantly throughout the entire nuclear weapons complex. Nevertheless, DOE has invested on average less than 7 percent of its EM budget in developing new technologies. By investing additional resources to devise more efficient methods for cleaning up its contaminated sites, DOE could save critical resources needed to finance its cleanup program over the long term.

Another way to reduce program costs may be to increase productivity through contract reform, privatization, and streamlining. DOE feels that it can reduce the total cost to complete its cleanup program from \$370 billion to \$240 billion through such increases in its productivity. Indeed, DOE estimates that unless it significantly enhances the productivity of its EM program, the costs to execute its cleanup program will exceed EM's projected budgets over the next six years alone by \$18 billion. In fact, the 20 percent increase in productivity that DOE expects to achieve in the EM program will still leave an \$8 billion gap--in 1997 dollars--between projected costs and budgets from 1996 to 2000. To bridge that gap, DOE is hoping to increase its productivity even more, a hope that may or may not be realistic.

The department could also achieve effective long-term cost reductions by realizing efficiencies in its cleanup program. It could do so by reducing those costs in the EM program that do not contribute directly to cleanup. Costs in that category--which account for about 40 percent of EM's projected total cost--include those for program management, sitewide infrastructure, and support functions such as financial offices, logistics support, and public information services. The Congress, in reports accompanying its defense authorization bills for 1995 and 1996, has encouraged DOE to initiate management reforms in order to reduce those costs in the EM program.

Legislative relief from restrictive clauses contained in the Superfund law--the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)--could reduce future cleanup costs for both DoD and DOE by establishing more lenient environmental cleanup standards. For example, CERCLA requires applying the most stringent cleanup standard when federal and local jurisdictions disagree over cleanup requirements. Revising the law to permit adopting less stringent standards under such circumstances could also reduce cleanup costs significantly. In addition, CERCLA favors selecting permanent, unlimited remedies to meet the highest cleanup standards. Revising the law to permit cleanup measures designed to meet standards appropriate to the most probable reuse of a property could save significant cleanup costs. DOE, for example, has estimated that the requirement to clean up its facilities for unlimited future use roughly doubles the cost of the cleanup program. Although less stringent standards could help improve the future affordability of DoD's and DOE's cleanup programs, extreme care should be taken to ensure that public health and safety remain guaranteed under less demanding standards and procedures.

CONCLUSION

Both DoD and DOE face serious difficulty in carrying out their plans for environmental cleanup. Both departments have made progress in identifying and analyzing their environmental problems, and both have begun actual cleanup at many of their contaminated sites. But the scope of cleanup work has continued to grow, and the cost to complete their cleanup programs may eventually exceed the best current estimates that the two departments have made.

To use scarce and shrinking resources most efficiently, both DoD and DOE might consider measures such as reducing administrative overhead, developing the most promising cleanup technologies, and better establishing priorities for their cleanup activities. Both departments would benefit from a measure of legislative relief that permitted them to clean up facilities only to the extent required by future use. Actions such as those would increase the prospect that needed cleanup measures could be completed with the resources likely to be available.

