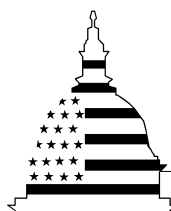


March 2006

ENVIRONMENTAL LIABILITIES

Long-Term Fiscal Planning Hampered by Control Weaknesses and Uncertainties in the Federal Government's Estimates



G A O

Accountability * Integrity * Reliability

Highlights of [GAO-06-427](#), a report to congressional requesters

Why GAO Did This Study

The nation's military installations and nuclear weapons production facilities have accumulated many types of waste and contamination over the years. The federal government estimated its environmental liability to clean up this waste at \$249 billion in fiscal year 2004, representing the federal government's third largest reported liability. It represents a significant future outflow of funds at the same time as many other competing demands for federal dollars, but is currently not auditable. GAO was asked to address (1) the nature and extent of the government's environmental liabilities, (2) the extent to which Energy's and Defense's processes and controls were designed to estimate and report environmental liabilities in accordance with federal accounting standards, and (3) the nature and types of uncertainties that are currently not estimable but could affect the cost of cleanup.

What GAO Recommends

GAO is making eight recommendations to help Defense improve its internal controls over its environmental liabilities by improving its financial management guidance and processes. We are also making a recommendation to help Energy improve its process for ensuring all litigation for potential disclosure is documented. Both Defense and Energy concurred with the recommendations, and described corrective actions being taken to address them.

www.gao.gov/cgi-bin/getrpt?GAO-06-427.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Linda Calbom at (202) 512-9508 or calboml@gao.gov.

ENVIRONMENTAL LIABILITIES

Long-Term Fiscal Planning Hampered by Control Weaknesses and Uncertainties in the Federal Government's Estimates

What GAO Found

The federal government's environmental liability reflects the estimated cost to clean up and dispose of environmental contamination in every state in the nation. The Departments of Energy and Defense report about 99 percent of this liability. Energy's reported liability of \$182 billion relates primarily to the cleanup and disposal of nuclear waste, contamination, and by-products that resulted from decades of nuclear weapons production. Defense's reported liability of \$64 billion is primarily for the cleanup of hazardous wastes at training ranges, military bases, and former defense sites; disposal of nuclear ships and submarines; and disposal of chemical weapons.

While the design of Energy's internal controls have enabled its auditors to determine that Energy's financial statements were presented fairly and in accordance with federal accounting principles, significant weaknesses in Defense's controls have hindered it from producing auditable environmental liability estimates. Specifically, Defense's outdated and incomplete accounting guidance for developing and reporting its environmental liability estimates led to errors in financial reporting; its policies and procedures for determining, reporting, and documenting environmental liability estimates were not consistently followed; and none of the military services had adequate controls in place to help ensure that all identified contaminated sites were included in their environmental liability cost estimates. These weaknesses not only affected the reliability of Defense's environmental liability estimate, but also that of the federal government as a whole.

Even if Defense resolved its internal control weaknesses, uncertainties exist for both Energy and Defense—the effect of which cannot currently be estimated—that could increase the government's environmental liabilities beyond the currently recorded amounts. These uncertainties involve the lack of feasible or proven remediation technologies, regulatory impediments and legal challenges, and uncertainties with the agencies' abilities to meet their current cost and schedule targets. It is important to understand the nature and extent of these uncertainties because they have the potential to materially impact the ultimate cost and timing of cleanup activities.

Craters Left as a Result of Underground Nuclear Testing at the Nevada Test Site



Source: National Nuclear Security Administration / Nevada Site Office

Energy's sites, for which estimated costs of remediation are not reported because no feasible remediation approach has been identified, include the nuclear explosion test area at the Nevada Test Site where over 900 nuclear test explosions have left residual radioactivity.

Contents

Letter

Results in Brief	1
Background	4
The Federal Government's Environmental Liabilities Are Significant, Widespread, and Complex	6
Energy's Processes and Controls Allowed It to Produce Estimates in Accordance with Federal Accounting Standards; Defense's Did Not	11
Major Uncertainties Will Affect Future Cleanup Costs and Funding Demands	21
Conclusions	31
Recommendations For Executive Action	42
Agency Comments and Our Evaluation	43
	44

Appendixes

Appendix I: Scope and Methodology	47
Appendix II: Comments from the Department of Defense	49
Appendix III: GAO Contact and Staff Acknowledgments	54

Related GAO Reports

55

Tables

Table 1: Primary Categories of Environmental Waste and Byproducts	7
Table 2: Accounting Requirements for Recording or Disclosing a Liability in the Federal Financial Statements	10

Figures

Figure 1: The Federal Government's Reported Fiscal Year 2004 Environmental Liabilities by Agency	12
Figure 2: Energy's Cleanup Locations and Waste Repositories as of September 30, 2004	14
Figure 3: Number of Defense's Reported Cleanup Locations by State	16
Figure 4: Energy's Reported Fiscal Year 2004 Environmental Liabilities by Type	18
Figure 5: Waste Drum Being Opened and Contents Processed through a Remote-Handled Waste Facility	19
Figure 6: Defense's Reported Fiscal Year 2004 Environmental Liabilities by Type	20

Contents

Figure 7: Aerial View of the Waste Treatment Plant under Construction at Hanford	25
Figure 8: Craters Left As A Result Of Underground Nuclear Testing At The Nevada Test Site	33
Figure 9: View of an Exploratory Tunnel at Yucca Mountain	36
Figure 10: An Excavator Removes Buried Transuranic Waste at Energy's Idaho Cleanup Location	38

This is a work of the U.S. government and is not subject to copyright protection in the United States. It may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



United States Government Accountability Office
Washington, D.C. 20548

March 31, 2006

The Honorable Todd R. Platts
Chairman
Subcommittee on Government Management,
Finance, and Accountability
Committee on Government Reform
House of Representatives

The Honorable Darrell E. Issa
Chairman
Subcommittee on Energy and Resources
Committee on Government Reform
House of Representatives

The nation's military installations and nuclear weapons production facilities have accumulated many types of waste and contamination over the years. This material, which includes radioactive byproducts from nuclear weapons production, nonradioactive but hazardous chemicals such as polychlorinated biphenyls (PCB), and unexploded ordnance such as bombs and missiles at military ranges, poses a potential threat to the public's health and well-being.¹ Various federal laws, agreements with states, and court decisions require the government to clean up these environmental hazards. Federal accounting standards require agencies responsible for cleaning up this waste and contamination to estimate the cleanup and disposal cost and report it in their financial statements as environmental liabilities.² In the federal government's fiscal year 2004 consolidated financial statements, these environmental liabilities were estimated at \$249 billion—the third largest reported liability facing the

¹Polychlorinated biphenyls (PCB) are chemicals once used as coolants and lubricants in transformers, capacitors, fluorescent lighting fixtures, and other electrical equipment. The manufacture of PCBs was banned in the United States in 1977 because of evidence that they build up in the environment and cause harmful effects in humans and in wildlife.

²Throughout this report, we use the terms cleanup or remediation interchangeably to refer to a wide range of activities intended to restore the environment, such as stabilizing contaminated soil, treating contaminated groundwater, decontaminating and demolishing contaminated buildings, and exhuming buried drums of waste.

federal government.³ This amount is currently unauditable and likely misstated given the problems we discuss later in this report with the Department of Defense's (Defense) controls over its estimation processes. Paying for this liability will require a significant future outflow of funds at the same time that the federal government will be facing many other competing demands for its limited dollars, such as escalating health care costs and growing Social Security obligations.

Given that the inability to estimate total environmental liabilities has contributed to our disclaimer of opinion on the U.S. government's consolidated financial statements, and that the ultimate cost of cleanup and disposal activities will affect the long-term fiscal outlook of the federal government, you asked us to review the government's financial reporting of its environmental liabilities.⁴ We focused our work on the two federal agencies primarily responsible for those efforts—the Department of Energy (Energy), which oversees the nation's nuclear weapons facilities, and Defense, which oversees the nation's military installations and weapons systems. Together, these two agencies comprised 99 percent of the cleanup and disposal cost estimates reported in the federal government's fiscal year 2004 consolidated financial statements. In response to your request, our report addresses

- the nature and extent of the environmental cleanup and disposal cost liabilities as reported in the federal government's financial statements,
- the extent to which Energy's and Defense's processes and controls are adequately designed to estimate and report environmental liabilities in accordance with related federal accounting standards, and
- the nature and types of uncertainties that are currently not estimable but could affect the ultimate cost of Energy's and Defense's environmental cleanup efforts.

³In this report, we primarily use environmental liability amounts reported as of fiscal year-end 2004. At the time we developed our audit approach and began our work, it was the most recent fiscal year for which an entire year's data were available. Reported environmental liabilities as of fiscal year-end 2005, compiled after our work began, totaled \$259.8 billion.

⁴As discussed later in this report, we previously reported on shortcomings with the federal budgeting process for environmental liabilities. See GAO, *Long-Term Commitments: Improving the Budgetary Focus on Environmental Liabilities*, [GAO-03-219](#) (Washington, D.C.: Jan. 24, 2003).

In performing our work, we focused our review on Energy's and Defense's *Performance and Accountability Reports* for fiscal year 2004, the most recent completed fiscal year at the time we began our review, to determine what the agencies recorded and reported in their financial statements with respect to their environmental liabilities.⁵ We interviewed Energy and Defense officials, visited various sites, and reviewed policies and other documentation to obtain a better understanding of each agency's cleanup responsibilities and the cleanup and disposal issues being addressed by each agency, their internal controls and procedures for developing their environmental liability estimates, and the uncertainties that could affect the ultimate cost of cleanup and disposal. In reviewing both agencies' internal controls, we did not review or test detailed contractor estimates but instead focused on each agency's procedures for compiling and developing its environmental liability amounts.

Because an independent public accounting firm audited Energy's fiscal year 2004 financial statements and found them to be fairly stated, we reviewed those statements, traced and verified environmental liabilities amounts to supporting schedules, and reviewed audit workpapers where available. We otherwise relied on the work performed by the independent auditors and did not perform additional audit procedures to verify the completeness or accuracy of the amounts reported. Because Defense has acknowledged serious data reliability problems related to its financial systems and information, including those involved in the reporting of its environmental liabilities, auditors did not attempt to perform audit procedures and disclaimed an opinion on Defense's fiscal year 2004 financial statements. Therefore, it was not our objective to—and we did not—audit the completeness or accuracy of Defense's reported environmental liabilities amounts. Although we have previously reported on the potential for Defense to incur costs in voluntary restoration initiatives in conjunction with returning overseas Defense facilities to host nations, these activities are not reported as environmental liabilities in its financial statements, and we did not review their international operations

⁵An agency's performance and accountability report contains the agency's description of its performance for the year as well as its annual financial statements and independent auditor's reports. Fiscal year 2004 reports reflect each agency's financial results and positions as of and for the year ended September 30, 2004.

or processes.⁶ Since Defense's reported amounts are not reliable, we are providing them in this report for informational purposes only.

We also reviewed Energy's and Defense's fiscal year 2005 *Performance and Accountability Reports* primarily to determine whether any significant new issues had arisen subsequent to the issuance of the fiscal year 2004 financial statements. We performed our work from October 2004 through January 2006 in accordance with generally accepted government auditing standards. Appendix I provides further details on our scope and methodology.

Results in Brief

The environmental liability amount reported in the federal government's consolidated financial statements reflects an estimate of the cost to clean up and dispose of environmental contamination in every state in the nation. Of the \$249 billion reported for fiscal year 2004, Energy's recorded liability was \$182 billion, the largest of any agency, and was related primarily to the cleanup of nuclear waste and contamination at about 50 Energy locations around the country. Over 40 percent of Energy's total liability relates to cleanup at three locations in Washington, South Carolina, and Idaho where most of the nation's nuclear weapons production activities occurred during World War II and the subsequent Cold War. The estimated cleanup costs relate to the treatment and disposal of millions of gallons of radioactive byproducts from making plutonium and other nuclear materials, decontamination and demolition of facilities used for decades in nuclear materials production, and the cleanup of contaminated soil and groundwater at these locations. Energy's recorded environmental liabilities also include estimates for the future cleanup of its current, or "active," facilities; long-term stewardship and monitoring at sites after they are cleaned up; and disposal of high-level waste, used ("spent") nuclear fuel, and excess special nuclear material. The radioactivity of most of Energy's waste makes its cleanup effort technically difficult, costly, and subject to significant legal challenges.

Defense's unaudited cleanup cost estimate, reported at \$64 billion in fiscal year 2004, accounted for the bulk of the government's remaining reported environmental liability balance. Its cleanup responsibilities include treatment and disposal of many types of hazardous wastes associated with

⁶GAO, *Opportunities Exist to Improve Future Comprehensive Master Plans for Changing U.S. Defense Infrastructure Overseas*, [GAO-05-680R](#) (Washington, D.C.: June 27, 2005).

military operations; disposal of weapons systems including nuclear ships and submarines; storage and disposal of highly toxic chemical weapons such as nerve agents and sulfur mustard blister agents; and environmental cleanup at military installations affected by base realignment and closures. Defense has identified about 600 military locations and over 1,700 formerly used defense locations requiring remediation in all 50 states.

Energy's processes and internal controls over the financial reporting of its environmental liabilities have enabled it to produce an estimate of its environmental liabilities in accordance with federal accounting standards for several years; however, Defense's have not. Key components of Energy's environmental liability estimation process include the issuance of internal control guidance to its field locations for the development and annual update of environmental liability estimates, independent reviews of selected projects, and establishment of a requirement that project work scope changes and cost increases be approved by a control board. Another key part of Energy's financial reporting process is its "contingency estimate," which is used to take into account the inherent uncertainties in estimating the cost of environmental cleanup activities. Adding this component to the liability helped Energy achieve a clean financial statement audit opinion in fiscal year 1999 and in subsequent years.

In contrast, numerous weaknesses in the design of Defense's processes and internal controls for estimating and reporting environmental liabilities have precluded it from producing an auditable estimate of its environmental liabilities. While some progress has been made over the years, we found that (1) Defense's outdated and incomplete accounting guidance for developing and reporting its environmental liabilities estimates led to errors in financial reporting; (2) its policies and procedures for determining, reporting, and documenting environmental liability estimates were not consistently followed; and (3) none of the military services had adequate controls in place to help ensure that all identified contaminated sites were included in their reported environmental liability estimates. These weaknesses not only impacted the reliability of Defense's environmental liability estimate, but also that of the federal government as a whole.

Even if Defense resolves all of its control deficiencies and reports cost estimates that meet all federal accounting standards, nonquantifiable uncertainties currently exist for both Energy and Defense that could increase the eventual cost of the cleanup beyond the estimated amounts recorded in the federal government's consolidated financial statements.

While not quantifiable, these, like the quantified environmental liabilities, add to the fiscal exposures of the federal government and will affect the long-term fiscal outlook. For example, various regulatory requirements and legal challenges have caused multiple delays in the licensing and design of the nation's planned high-level waste repository at Yucca Mountain, Nevada, and many of the environmental liability cost estimates are predicated upon Yucca Mountain opening and accepting this waste by certain milestone dates. Further delays could cause construction, interim storage, and other costs to increase, but Energy has not yet committed to a new target date for opening the repository. These uncertainties do not affect the auditability of the liability because under current federal accounting standards a potential liability that cannot be estimated but is considered at least reasonably possible to occur is not required to be recorded, only disclosed. Both Energy and Defense currently disclose these types of uncertainties in the notes to their financial statements, although improvements in their disclosures are warranted at both agencies.

Given these uncertainties and the extensive internal control weaknesses at Defense, the ultimate cost and funding requirements of cleanup and disposal of the federal government's environmental contamination cannot be fully determined. Improving Defense's financial management processes and controls are critical to ensuring that environmental liability estimates are as reliable as possible under current circumstances. We are making eight recommendations to Defense that, if properly implemented, will improve internal controls at Defense to help ensure that its environmental liabilities estimates are adequately supported and properly reported. We are also making a recommendation to Energy to help improve disclosure in the notes to the financial statements of uncertainties that could have a significant impact on ultimate cleanup costs. We provided Energy and Defense with a draft of applicable sections of this report for their review and comment. We received verbal comments from Energy, and written comments from Defense that are reprinted in appendix II. Each concurred with the respective recommendations made to them and described the corrective actions they were taking to address them.

Background

Federal agencies' responsibilities for environmental cleanup are set forth in a number of different laws, regulations, and agreements. For example, many of Energy's and Defense's cleanup activities are governed by the

Resource, Conservation, and Recovery Act of 1976, as amended,⁷ and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.⁸ Additionally, the Nuclear Waste Policy Act of 1982, as amended,⁹ established a program for the development of a geologic repository (a permanent deep disposal system) for disposing of high-level radioactive waste and spent nuclear fuel; the Waste Isolation Pilot Plant Land Withdrawal Act¹⁰ provided for the establishment of a repository for transuranic wastes. Furthermore, 10 U.S.C. §§ 2701-2709 established the Defense Environmental Restoration Program to identify, investigate, and clean up properties contaminated by Defense’s activities. Table 1 describes the primary categories of waste and materials that the government is faced with cleaning up.

Table 1: Primary Categories of Environmental Waste and Byproducts

Type	Description
Spent nuclear fuel	Fuel elements and irradiated targets that have been removed from nuclear reactors. These spent fuels are highly radioactive and must be stored in special facilities that shield and cool the materials.
High-level waste	Highly radioactive liquid left over when spent nuclear fuel is reprocessed to recover reusable uranium or plutonium. Most of Energy’s high-level waste came from the production of plutonium. This designation is also applied to solids made when liquid high-level waste is treated. This waste typically contains highly radioactive, short-lived fission products as well as long-lived isotopes, hazardous chemicals, and toxic heavy metals. High-level waste must be isolated from the environment for thousands of years.
Transuranic waste	Waste contaminated with transuranic elements at a concentration higher than 100 nanocuries per gram. This includes soil and chemicals as well as contaminated tools, equipment, and clothing. Transuranic waste is generated during nuclear weapons production and other activities involving long-lived transuranic elements, such as plutonium. Some of these isotopes have half-lives of tens of thousands of years, thus requiring long-term isolation.
Low-level waste	Any radioactive waste that does not fall into one of the above categories regardless of content, activity level, or longevity. Most low-level waste contains small amounts of radioactivity in large volumes of material.

⁷42 U.S.C. §§ 6901-6991k.

⁸42 U.S.C. §§ 9601-9675.

⁹42 U.S.C. §§ 10101-10270.

¹⁰Pub. L. No. 102-579, 106 Stat. 4777 (October 30, 1992), as amended by Pub. L. No. 104-201, div. C, title XXXI, §§ 3181-3191, 110 Stat. 2422, 2851 (September 23, 1996).

(Continued From Previous Page)

Type	Description
Hazardous waste	Hazardous wastes are chemical wastes containing substances defined as hazardous by law. These are capable of causing illness, death, or some other harm to humans and other life forms when mismanaged or released into the environment.
Mixed waste	Waste that contains both radioactive and chemically hazardous materials. Some high-level, transuranic, and low-level wastes are also hazardous and thus are also considered mixed waste.

Source: GAO.

In our report on major challenges facing the nation in the 21st century, we pointed out that progress in cleaning up sites frequently does not meet expected time frames and the costs dramatically exceed available funding levels.¹¹ Furthermore, the current approaches to cleaning up the various sites are not consistent and, in some cases, not especially efficient or effective. Such issues are some of the reasons we have designated aspects of Energy's and Defense's operations as high-risk areas for the federal government.¹² We have also previously reported on shortcomings with the federal budgeting process for environmental liabilities.¹³ Specifically, we reported that because the federal budget is primarily calculated on a cash basis, the full costs of a program that will have cleanup costs are not recognized in the budget, nor are estimates of these future costs provided elsewhere in budget documents. Consequently, the budget itself does not provide policymakers the information to compare the full costs of certain programs and thus, the long-term fiscal exposures. We have previously suggested to the Congress that budget process mechanisms be developed to prompt more deliberations about such fiscal exposures while recognizing the uncertainty inherent in estimating some long-term costs.¹⁴

Meeting these cleanup responsibilities carries a financial cost, and federal accounting standards require the costs associated with the federal government's environmental cleanup responsibilities to be reported in the respective agencies' financial statements as well as the federal

¹¹GAO, *21st Century Challenges: Reexamining the Base of the Federal Government*, [GAO-05-325SP](#) (Washington, D.C.: February 2005).

¹²GAO, *High-Risk Series: An Update*, [GAO-05-207](#) (Washington, D.C.: January 2005).

¹³GAO, *Long-Term Commitments: Improving the Budgetary Focus on Environmental Liabilities*, [GAO-03-219](#) (Washington, D.C.: Jan. 24, 2003).

¹⁴GAO, *Fiscal Exposures: Improving the Budgetary Focus on Long-Term Costs and Uncertainties*, [GAO-03-213](#) (Washington, D.C.: Jan. 24, 2003).

government's consolidated financial statements. The Federal Accounting Standards Advisory Board's Statement of Federal Financial Accounting Standards (SFFAS) No. 5, *Accounting for Liabilities of the Federal Government*, requires the recognition of a liability when there has been a past government-related event and there is both a probable and a reasonably estimable future outflow or sacrifice of resources.¹⁵ If a future outflow of resources is probable but the amount is not reasonably estimable, then SFFAS No. 5 requires the disclosure of a liability in the notes to the financial statements with a statement that the amount of the liability cannot be estimated. If a future outflow of resources is not considered probable but there is at least a reasonable possibility that a loss or future expenditure may be incurred, SFFAS No. 5 requires disclosure of the possible liability in the notes to the financial statements. Table 2 explains in more detail the accounting criteria for determining when to record a liability in the federal financial statements, disclose it in the notes to the financial statements, or not disclose it at all.¹⁶

¹⁵Recognition means reporting a dollar amount on the face of the financial statements.

¹⁶Several other federal accounting standards also apply to environmental liability disclosures. The Federal Accounting Standards Advisory Board's Federal Financial Accounting and Auditing Technical Release No. 2, *Determining Probable and Reasonably Estimable for Environmental Liabilities in the Federal Government*, provides further guidance to agencies in recognizing their environmental liabilities. SFFAS No. 6, *Accounting for Property, Plant, and Equipment*, addresses cleanup that is deferred until the operation of the associated property, plant, or equipment ceases permanently or temporarily. SFFAS No. 6 requires the entity to estimate the total cleanup cost when the associated property, plant, or equipment is placed into service and to recognize a portion of the estimated total cleanup cost as an expense during each period the facility is in operation.

Table 2: Accounting Requirements for Recording or Disclosing a Liability in the Federal Financial Statements

Likelihood of future outflow or other sacrifice of resources	Degree to which loss can be measured		
	Loss amount can be reasonably measured	Loss range can be reasonably measured	Loss amount or range cannot be reasonably measured
Probable: Future confirming event(s) are more likely to occur than not ^a	Record a liability (reported on balance sheet and statement of net cost)	Record a liability for best estimate or minimum amount in loss range if there is no best estimate, and disclose nature and range of estimated liability	Disclose nature of liability and include a statement that an estimate cannot be made
Reasonably possible: Possibility of future confirming event(s) occurring is more than remote and less than likely	Disclose nature of possible liability and estimated loss amount	Disclose nature of possible liability and estimated loss range	Disclose nature of possible liability and include a statement that an estimate cannot be made
Remote: Possibility of future event(s) occurring is slight	No disclosure	No disclosure	No disclosure

Source: Statement of Federal Financial Accounting Standards, No. 5.

^aFor liabilities related to litigation, probable is defined as a future confirming event(s) that is likely to occur.

Federal agencies are also obligated to establish and maintain effective internal control. We issue the standards for internal control in the federal government, which provide the overall framework for establishing and maintaining internal control and for identifying and addressing major performance and management challenges and areas at greatest risk of fraud, waste, abuse, and mismanagement.¹⁷ According to the standards, internal control is an integral component of an organization’s management that provides reasonable assurance that agency objectives—such as the reliability of financial reporting and the effectiveness and efficiency of operations—are being met. These standards define the minimum level of quality acceptable for internal control in government and provide the basis against which internal control is to be evaluated.

¹⁷GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

The Federal Government's Environmental Liabilities Are Significant, Widespread, and Complex

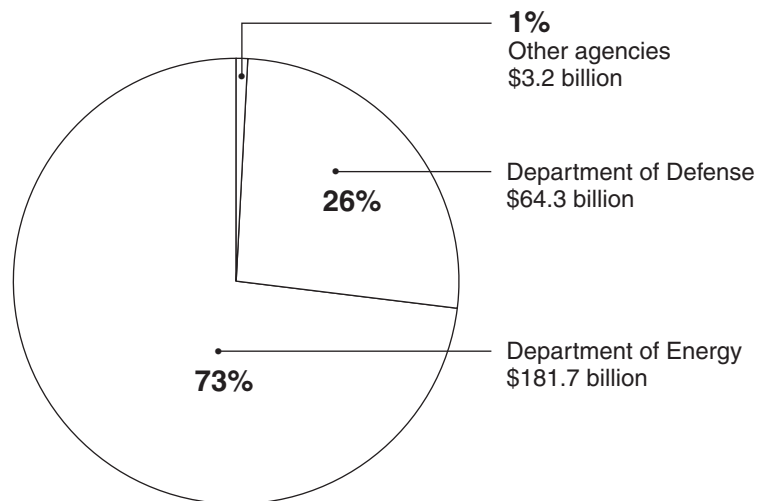
For fiscal year 2004, the estimated cost for environmental cleanup reported in the federal government's consolidated financial statements was \$249.2 billion—the third largest reported liability. The government's responsibility for cleanup extends to locations in every state of the nation, with Energy and Defense showing marked differences in the nature of these locations and the types of cleanup needed.¹⁸ Energy's liability is primarily for the cleanup of waste resulting from the nation's nuclear weapons complex, and the number of these locations is considerably fewer than the locations for which Defense is responsible. Although concentrated at fewer locations, the radioactivity associated with much of Energy's cleanup work make the efforts technically difficult and costly. Defense's liability is for contamination from current and past military activities at over 2,300 locations across the country, creating difficult management challenges. While cleanup at many of these locations may not carry the same technical challenges as those associated with Energy's nuclear cleanup responsibilities, some Defense locations have chemical weapons or hazardous waste that carry considerable challenges of their own.

The Federal Government's Cleanup Responsibilities Are Vast and Span the Nation

The federal government's reported environmental liability is an estimated amount, stated in current dollars. As illustrated in figure 1, Energy and Defense together made up \$246 billion (99 percent) of the federal government's total reported environmental liability at the end of fiscal year 2004. The remaining \$3 billion (1 percent) of the reported 2004 liability represented the estimated environmental cleanup costs of 12 other federal agencies, with the three largest being the Department of Transportation (\$1.1 billion), National Aeronautics and Space Administration (\$987 million), and the Department of Veterans Affairs (\$339 million).

¹⁸For purposes of this report, we use the term location to refer to all of the environmental cleanup at a particular place, such as at Energy's Hanford nuclear reservation or Defense's Puget Sound Naval Shipyard. We use the term site to refer to the various cleanup projects or areas of contamination awaiting cleanup at a location. Thus, a particular cleanup location could have many contaminated sites.

Figure 1: The Federal Government's Reported Fiscal Year 2004 Environmental Liabilities by Agency



Source: Fiscal year 2004 *Financial Report of the U.S. Government* and GAO.

The size of the overall estimate makes the environmental liability amount the third largest reported liability that the federal government faces, behind federal debt securities held by the public with their related accrued interest and federal employee and veteran benefits payable.¹⁹ As such, management of the environmental liability represents one of the federal government's major challenges from both financial and environmental perspectives.

The majority of Energy's environmental liability, reported at \$182 billion as of September 30, 2004, comes from nuclear weapons production during World War II and the Cold War. During this period, the United States built a massive industrial complex to research, produce, and test nuclear weapons. At all locations where these activities took place, environmental contamination of buildings, soil, surface water, and groundwater occurred. This environmental legacy of nuclear weapons production also produced large volumes of radioactive and chemical waste requiring treatment,

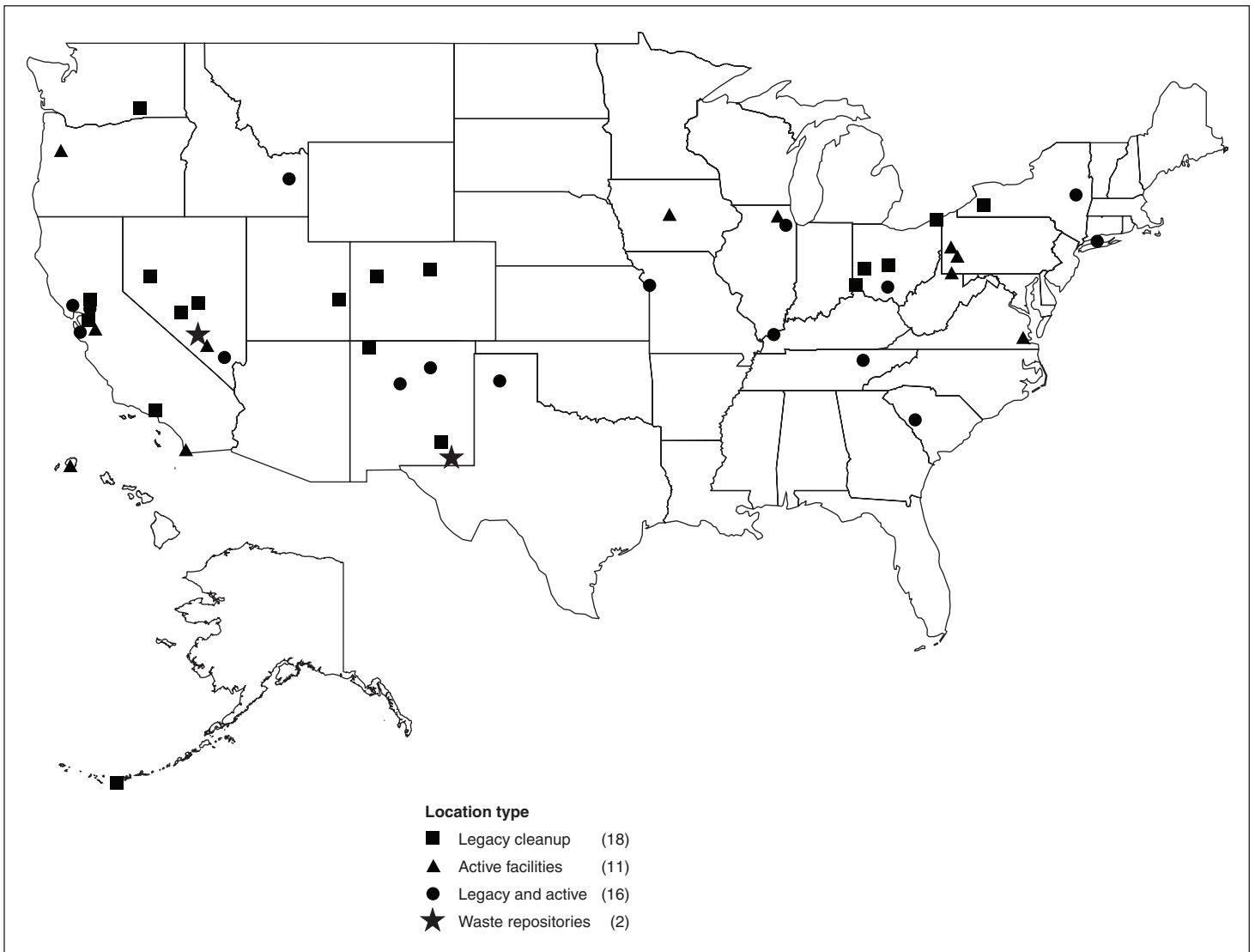
¹⁹Under federal accounting standards, the reported liability for social security is only that amount due and payable at the end of the fiscal year, not the estimated amount of future payments. As previously mentioned, the environmental liability estimate is likely misstated given Defense's internal control weaknesses with its estimation processes, discussed later in this report.

stabilization, and disposal. Collectively, the waste remaining from the development and production of nuclear weapons is referred to as legacy waste. Energy is also responsible for stabilizing and disposing of waste from ongoing operations at active facilities, such as at its national laboratories, which carry out scientific research for national and defense purposes.²⁰ Additionally, Energy is tasked with disposing of radioactive special nuclear materials and depleted uranium surplus from our national defense needs, including the nation's surplus plutonium and highly enriched uranium used in nuclear weapons. Energy has about 50 locations nationwide for which it is responsible for cleaning up, stabilizing, and disposing of hazardous and radioactive wastes and materials resulting from past and current operations.²¹ Figure 2 shows major Energy locations where legacy and active facility wastes require cleanup either currently or in the future. Although Energy's legacy and active facility waste cleanup and disposal locations are dispersed throughout the United States, over 40 percent of Energy's total environmental liabilities estimate pertains to cleanup and related long-term monitoring at just three locations: Hanford near Richland, Washington; Savannah River near Aiken, South Carolina; and Idaho National Laboratory near Idaho Falls, Idaho.

²⁰The national laboratories are a system of research facilities funded and controlled by Energy to advance science and help promote the economic and defensive interests of the country.

²¹Energy's Office of Environmental Management (EM) has responsibility for managing the environmental cleanup of its legacy waste. Energy refers to "active facilities" as those facilities requiring cleanup that are operated by programs other than EM. The Office of Legacy Management has responsibility for long-term stewardship after locations are remediated and closed.

Figure 2: Energy's Cleanup Locations and Waste Repositories as of September 30, 2004



Source: U.S. Department of Energy support for its September 30, 2004, audited financial statements, and GAO.

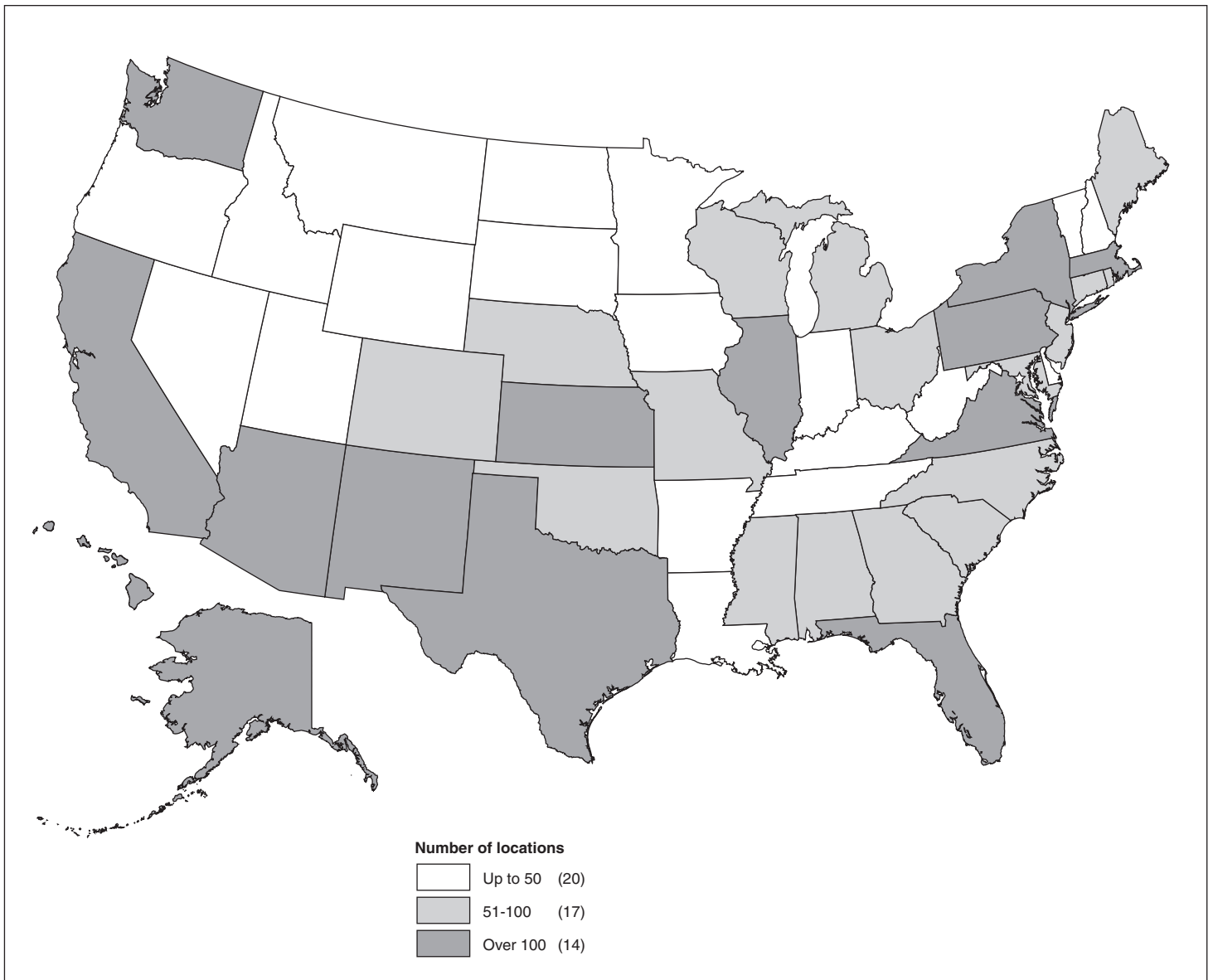
Note: Map locations not drawn to scale.

In contrast to Energy, Defense reports a need to clean up over 2,300 locations around the country. This includes about 600 current and base realignment and closure (BRAC) military locations and over 1,700 formerly

used defense locations in every state in the country.²² Defense is required to clean up contamination resulting from past and current waste disposal practices, leaks, spills, and other activities that have created a public health or environmental risk. Defense is also responsible for costs of (1) closure and monitoring associated with the transportation, storage, and disposal of hazardous wastes, (2) disposal of weapons systems such as nuclear ships and submarines and their associated spent nuclear fuel, (3) storage and disposal of highly toxic chemical weapons, and (4) environmental cleanup related to base realignments and closures. As figure 3 shows, every state has at least one such Defense cleanup location, and 14 states have more than 100.

²²These formerly used defense sites were once owned or controlled by Defense but are now owned by states, local governments, and individuals. The U.S. Army Corps of Engineers is responsible for identifying, investigating, and cleaning up hazardous, toxic, and radioactive wastes; ordnance and explosive wastes; and unsafe buildings if Defense caused the unsafe condition.

Figure 3: Number of Defense's Reported Cleanup Locations by State



Source: Defense's Environmental Restoration Program Database as of September 30, 2004, and GAO.

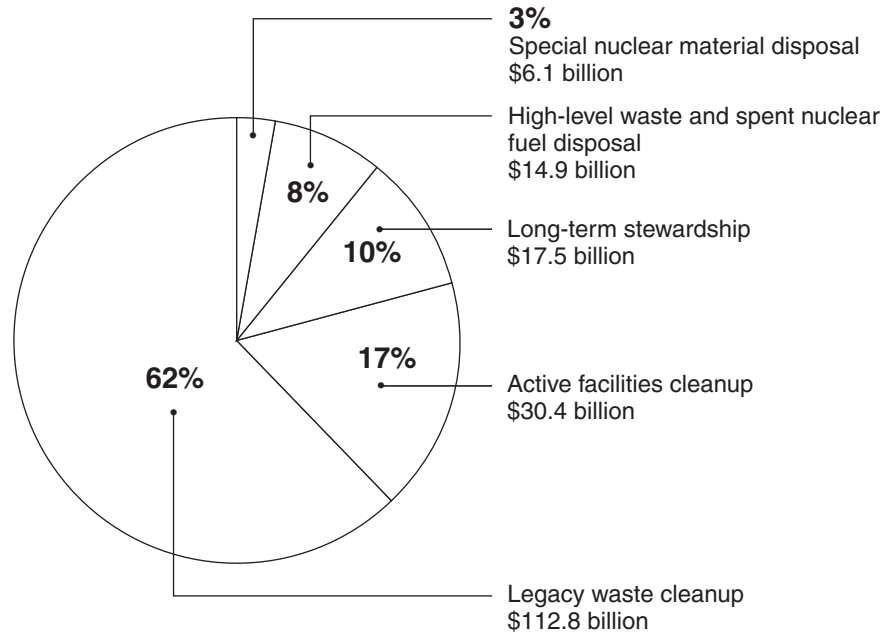
Note: Map does not reflect the locations of chemical weapons and nuclear ships and submarines. The number of states reflected in the legend includes the District of Columbia.

Cleanup Efforts Pose Diverse Challenges

As shown in figure 4, about \$130 billion (72 percent) of Energy's reported fiscal year 2004 environmental liability relates primarily to the cleanup and long-term stewardship of legacy waste at sites where weapons research, production, and testing took place. By comparison, Energy's 2004 liability for the estimated cost of cleaning up its active facilities when current operations cease was only \$30 billion, 17 percent of the total. Energy's plan is to dispose of its high-level waste and spent nuclear fuel in a deep geologic repository that will also be used for the disposal of such waste from other federal agencies and commercial nuclear generators. Energy's allocated share of the disposal cost at the repository is \$15 billion, 8 percent of its reported environmental liability.²³ The remaining \$6 billion, 3 percent of the liability, primarily relates to the disposal of special nuclear material in excess of national defense needs.

²³As discussed later in this report, the estimated target date for the opening of the repository, which currently hasn't been constructed, has been delayed several times due to various legal and regulatory challenges. Due to recent difficulties, Energy has not committed to a new target date and thus, there is significant uncertainty as to what the final cost of the repository might be.

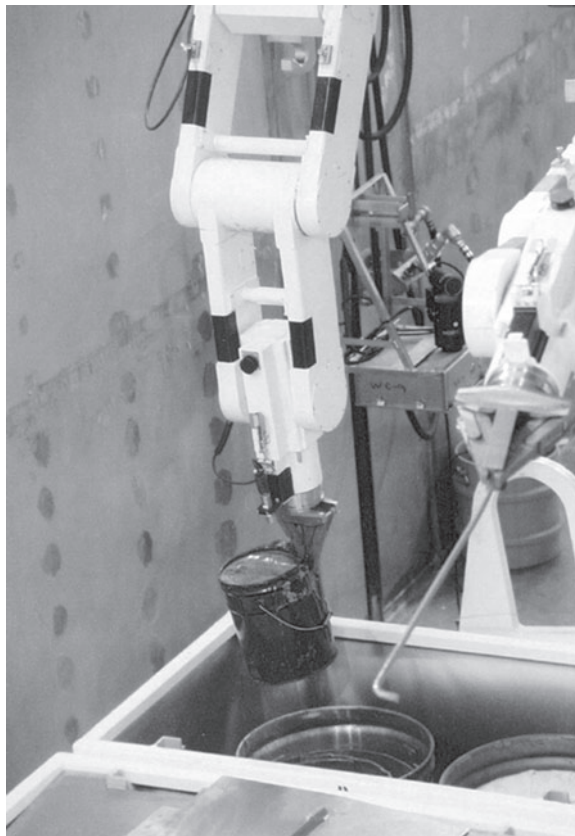
Figure 4: Energy's Reported Fiscal Year 2004 Environmental Liabilities by Type



Source: Energy's *Fiscal Year 2004 Performance and Accountability Report* and GAO.

Energy's cleanup and disposal efforts involve difficult and costly technical challenges. The physical characteristics and radioactivity of its wastes affect the handling requirements, treatment, and disposal methods, and thus the cost of cleanup. For example, Energy's cleanup efforts involve large amounts of radioactive waste from nuclear weapons production. While the level of radioactivity varies, some waste—such as waste contaminated with plutonium—will stay radioactive for thousands of years. As a result, some wastes must be remotely handled with special robotic machines sealed in heavily shielded rooms because they are too dangerous for workers to physically handle. This further adds to the cost of cleanup.

Figure 5: Waste Drum Being Opened and Contents Processed through a Remote-Handled Waste Facility

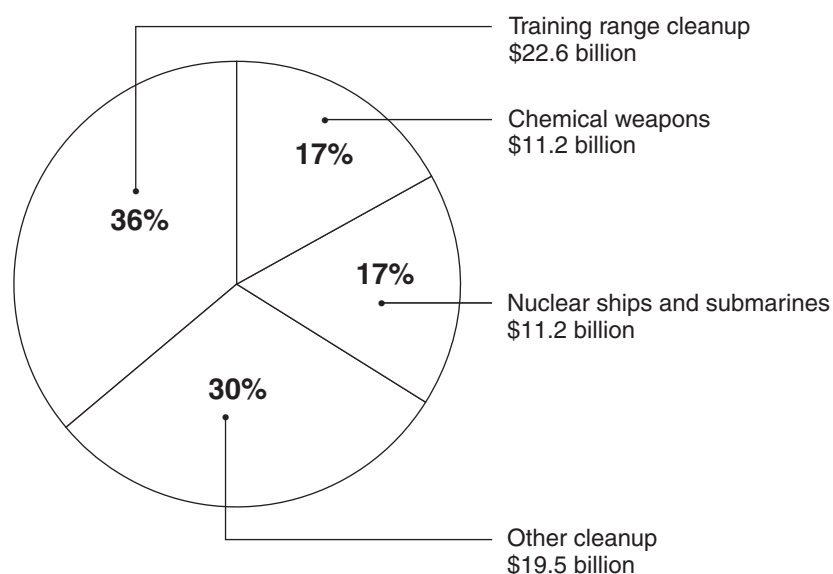


Source: U.S. Department of Energy.

Furthermore, Energy is developing and testing technologies and methods of treatment for certain types of waste because there are currently no proven methods for cleaning them up. As discussed later in this report, some of these treatment methods have proved unsuccessful, requiring Energy to pursue new methods. This lack of treatment technology means that the cost to treat these wastes will likely increase. Also, the hazardous and long-lived nature of much of Energy's waste has resulted in contention between interested parties as to the best way and extent to which cleanup should occur. As discussed later in this report, this has at times resulted in legal challenges, which can also increase the extent and cost of cleanup.

The Defense portion of the federal government's environmental liabilities also poses significant challenges. Defense's environmental liabilities, shown in figure 6, consist primarily of (1) hazardous waste disposal and cleanup on training ranges, including removal of unexploded ordnance, (2) disposal of nuclear ships and submarines, and (3) disposal of chemical weapons. The "other" category includes cleanup of hazardous wastes (such as petroleum products and PCBs) at military bases and formerly used defense sites.

Figure 6: Defense's Reported Fiscal Year 2004 Environmental Liabilities by Type



Source: Defense's Fiscal Year 2004 Performance and Accountability Report and GAO.

Although the technical processes for dealing with Defense's cleanup may be more clearly defined and understood at this point than the processes for dealing with some of Energy's cleanup of high-level radioactive wastes, many of Defense's cleanup efforts are nonetheless significant and challenging. Not only are Defense's cleanup efforts spread across the nation, but estimating the future costs of disposing of nuclear ships and submarines is complicated by the uncertainty surrounding the final disposal location of spent nuclear fuel, as discussed more fully later in this report. Further, Defense has responsibility for safeguarding the environment and human life from the extreme risks inherent in storing the nation's stockpile of deadly chemical weapons—including highly toxic

nerve agents and sulfur mustard blister agents—while working to develop alternative methods for their disposal.

Energy's Processes and Controls Allowed It to Produce Estimates in Accordance with Federal Accounting Standards; Defense's Did Not

Energy's processes and internal controls for developing its overall environmental liability estimate have evolved and improved over time to the point where, for fiscal years 1999 through 2004, its auditors determined that the financial statements that reported the estimated environmental liabilities were presented fairly and in accordance with federal accounting principles.²⁴ Key components of Energy's environmental liability estimation process include the issuance of internal control guidance to its field locations for the development and annual update of environmental liability estimates; independent reviews of selected projects; and establishment of a requirement that project work scope changes and cost increases be approved by a control board. Another key part of Energy's financial reporting process is its "contingency estimate," which is used to take into account the inherent uncertainties in estimating the cost of environmental cleanup activities. Adding this component to the liability estimate helped Energy achieve a clean financial statement audit opinion in fiscal year 1999 and subsequent years. While Energy's auditors identified some issues related to the environmental liability reporting process that require corrective action, none of these were significant enough to materially impact the reasonableness of the overall liability estimate.

Defense has made some improvements to its controls in recent years, such as issuing management guidance for reporting environmental cleanup costs that are not funded under the Defense Environmental Restoration Program. However, there remain significant weaknesses in Defense's processes and internal controls that have hindered it from producing auditable estimates of its environmental liabilities. Specifically, Defense's outdated and incomplete accounting guidance for developing and reporting its environmental liabilities estimates led to errors in financial reporting; its policies and procedures for determining, reporting, and documenting

²⁴Energy's auditors disclaimed an opinion on Energy's fiscal year 2005 financial statements due to limitations on the scope of work they could perform on the overall audit. During 2005, Energy implemented a new accounting system and chart of accounts and reorganized its finance and accounting services, which resulted in a significant number of conversion, posting, reconciliation, and reporting issues that Energy was unable to resolve by fiscal year-end. As a result, the auditors were not able to perform the work necessary to express an opinion on Energy's financial statements for the year. Energy reported environmental liabilities of \$189.7 billion in its fiscal year 2005 financial statements.

environmental liability estimates were not consistently followed; and none of the military services had adequate controls in place to help ensure that all identified contaminated sites were included in their environmental liability cost estimates. These weaknesses not only impacted the reliability of Defense's environmental liability estimate, but also that of the federal government as a whole.

Auditors Found Energy's Processes and Controls Sufficient to Produce Reliable Environmental Liability Estimates in Accordance with Federal Accounting Standards

Over the years, the design of Energy's processes and internal controls for developing its overall environmental liability estimate has evolved and improved, which enabled its auditors to determine that Energy's financial statements that reported these estimates were presented fairly and in accordance with federal accounting principles from fiscal years 1999 through 2004. Beginning in fiscal year 1999, Energy issued written internal control guidance to its field offices outlining requirements they are to follow in the development and annual update of environmental liability estimates, such as assigning responsibilities, maintaining supporting documentation, and reviewing and approving the estimates. Energy's estimating process for its legacy waste cleanup, which represented 62 percent of its fiscal year 2004 environmental liability estimate, normally starts with life cycle cost estimates that are usually prepared by Energy's contractors based on the extent of cleanup, timing of the work, and funding levels. External independent reviews are to be conducted each year on selected projects, and headquarters management is to perform baseline validation reviews of projects before they are put under Energy's configuration control process. The configuration control process requires that proposed changes to a particular project, such as a change in cost estimate or a change in work scope, be approved by Energy's configuration control board.²⁵ Energy's second largest environmental liability component—the future clean up of its active facilities—represented 17 percent of its 2004 environmental liability total. Unlike the legacy waste component that is managed entirely by Energy's Office of Environmental Management, active facilities may be managed by any of several different programs, such as Energy's Office of Science or the National Nuclear

²⁵The configuration control board is made up of deputy assistant secretaries in Energy's Office of Environmental Management. According to one board official, the board meets at least monthly to review project baselines and proposed baseline changes. Proposed baseline changes that result in a decrease in cost estimate do not require the configuration control board's approval but do require formal notification to the board of the change.

Security Administration (NNSA).²⁶ Energy's Office of the Chief Financial Officer developed an approach in 1996 that uses a cost-estimating model to develop its active facilities baseline estimate. With the model, various parameters, such as facility type and size, are used to estimate the total cost of cleanup, including facility deactivation and decommissioning. Some locations, such as the Idaho National Laboratory, have developed their own site-specific active facilities liability estimates, and thus, are not included in the baseline model. Idaho lab officials indicated they develop their estimate based on more specific information about their facilities than the baseline model requires, which enables them to prepare a more detailed active facilities estimate.

Accounting standards recognize that no one accounting estimate can be considered accurate with certainty.²⁷ One of the auditors' criticisms of Energy's fiscal year 1998 environmental liability estimate was that it did not sufficiently reflect significant uncertainties associated with the technical cleanup scope of the program. Thus, in fiscal year 1999 Energy began adding an amount—which Energy refers to as a contingency estimate—to its environmental liabilities baseline amount to help recognize the risks associated with its projects, such as the reliance on new technology and complex construction projects. In fiscal year 2004, Energy added \$33.2 billion to its baselines estimates for this contingency estimate, 18.3 percent of its total environmental liabilities, which the auditors reviewed as part of Energy's annual financial statement audit.²⁸

Although the contingency amount is significant, it is not intended to estimate all uncertainties. Federal accounting standards require recording a liability only when a future outflow of resources is considered both probable and measurable. The estimated liability may be a specific amount or range of amounts. If the estimate is a range, the standards require only

²⁶NNSA is a separate entity within Energy responsible for the management and security of the nation's nuclear weapons, nonproliferation, and naval reactor programs.

²⁷American Institute of Certified Public Accountants, Statement on Auditing Standards No. 57, *Auditing Accounting Estimates*, AU §342.14. This standard became effective for audits of financial statements for periods beginning on or after January 1, 1989.

²⁸The \$33.2 billion contingency estimate primarily represents the contingency amount generated by Energy's contingency model. In some cases, specific locations or projects develop their own contingency amounts separate from the model. The actual contingency percentages generated by the model in fiscal year 2004 ranged from 26.3 percent for the legacy waste component to 16.9 percent for the long-term stewardship portion of the liability.

the minimum amount in the range to be recognized unless some amount within the range is a better estimate. Energy developed its contingency methodology to derive its best estimate within the range. For each project, the cognizant project manager assigns a risk score of one to five to each of three project characteristics: project definition, which refers to how well the project is defined in terms of its cost, schedule, and scope; innovation, which refers to the maturity of technology upon which the project is reliant; and complexity, which refers to the difficulty and number of processing and treatment steps required. These risk scores are then input to a statistical model that predicts the range of total life-cycle cleanup costs and the mean within the range. The difference between the mean and the current project baseline total is the amount that is recorded as the contingency estimate.

This additional contingency amount is necessary because Energy's cleanup cost estimates can and have experienced significant increases. For example, Energy is currently constructing a waste treatment plant consisting of three treatment facilities, an analytical laboratory, and several support structures to attempt to treat over 53 million gallons of radioactive and hazardous waste at its Hanford location, but this complex project has experienced several cost increases. It was originally approved for \$4.3 billion in 2000, but later increased to \$5.8 billion in 2003. Subsequent problems—including required changes to the design's seismic criteria after the seismic assumptions were found inadequate—resulted in the contractor revising the cost estimate in 2005 to \$8.0—\$8.3 billion, which Energy has not yet approved. The Army Corps of Engineers (Corps) reviewed the contractor's revised cost estimate under an agreement with Energy, and found that the actual cost could be an additional \$1.3 billion higher than the revised estimate. Although Energy has not yet approved a revised estimate, both the contractor's revised estimate and Corps' review of it indicated that the final cost will likely be significantly higher than the current \$5.8 billion estimate. At Energy's request, the contractor subsequently submitted a more detailed cost estimate in early fiscal year 2006, which the Corps is now reviewing. Because of the uncertainty of the project estimate, Energy added both a project-specific contingency estimate and included this project in the statistical model calculation of its overall contingency estimate in fiscal year 2005. These construction cost increases are the types of things for which Energy established its contingency amount. Using this overall approach to develop its environmental liability estimate, Energy has been able to produce an auditable estimate from fiscal years 1999 through 2004.

Figure 7: Aerial View of the Waste Treatment Plant under Construction at Hanford



Source: U.S. Department of Energy.

Minor Improvements at Energy Would Help Enhance Reliability of Estimates

In its audit report on Energy's fiscal year 2004 financial statements, Energy's independent auditors did not identify any material weaknesses or reportable conditions related to environmental liabilities, but did identify two matters related to environmental liabilities that warranted communicating to management for corrective action.²⁹ While not material to the overall estimate, continued attention to improvement helps ensure the future auditability of the estimate. The following are the issues the auditors identified in fiscal year 2004.

²⁹Reportable conditions are significant deficiencies in the design or operation of internal control that could adversely affect the entity's ability to record, process, summarize, and report financial data consistent with the assertions of management in the financial statements. A material weakness is a reportable condition in which the design or operation of one or more of the internal control components does not reduce to a relatively low level the risk that misstatements caused by error or fraud in amounts that would be material in relation to the financial statements being audited may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions.

-
- As previously discussed, Energy uses a cost-estimating model to estimate its environmental liability for the future remediation of active facilities. Field location personnel are responsible for inputting and verifying certain facility data such as type of facility (e.g., office space, laboratory), size, and a general characterization of the type of contamination in the facility. The model then uses the data to estimate the active facilities' portion of the environmental liability estimate. In fiscal year 2004, the auditors tested a statistical sample of facilities and structures from each of five locations to test the reliability and accuracy of selected facility data, and found immaterial errors at two of the five locations. The auditors made recommendations to correct the specific errors and to improve internal controls for verifying the accuracy of the data.
 - The auditors' review of selected key projects identified two instances where the field location did not have adequate supporting documentation on file for its cost estimates. For both projects, the field location was ultimately able to produce detailed information that satisfied the auditors as to the reasonableness of the cost estimates. However, the auditors made recommendations to establish procedures to ensure that all project cost estimates were adequately supported by written documentation and reviewed.

In fiscal year 2005, the auditors also noted immaterial errors in the active facilities' data and supporting documentation tested, although the specific locations at which these errors were identified may have changed. The auditors made specific recommendations in each instance, and indicated that management generally agreed with the findings and was responsive to the recommendations.

In addition, we learned of an instance during our review where the estimated cleanup cost of a particular project was erroneously excluded from a prior-year environmental liability estimate. Specifically, in fiscal year 2003, Energy's Office of Environmental Management recorded a liability for the estimated cost of operating the Savannah River Site's H Canyon Processing Facility through fiscal year 2007, and assumed that NNSA would take over responsibility for the facility and record the liability for fiscal years 2008 through 2010. However, NNSA never agreed to take over responsibility for this facility and thus did not record those costs, which were estimated at \$632 million. The Office of Environmental Management subsequently included the full amount in its fiscal year 2004 estimates. Subsequent to the costs being excluded, Energy issued a policy

requiring such transfers to be formally documented, agreed to by the affected parties, and approved by the Secretary of Energy through the Chief Financial Officer. If properly implemented, this should help ensure that estimates associated with such transfers are not excluded in future estimates.

While these errors and omissions were not material to the overall liability estimate, continued attention and improvements to Energy's internal controls would help provide additional assurance that its overall environmental liability estimates are reliable and are reported in accordance with federal accounting standards.

**Outdated and Incomplete
Financial Management
Guidance Impeded
Defense's Ability to Reliably
Estimate Environmental
Liabilities**

At the time of our review, the accounting guidance provided by Defense's Financial Management Regulations (FMR) had not been updated to reflect current federal accounting standards for determining and reporting environmental liabilities. This outdated and incomplete guidance contributed to financial reporting errors in fiscal years 2004 and 2005 as follows.

- Changes in federal accounting standards, which eliminated the asset category of National Defense Property, Plant, and Equipment, and changed the required accounting for the associated environmental liabilities were issued in May 2003.³⁰ Defense's FMR had not been timely updated to reflect the effect of these changes for recognition of cleanup costs related to nuclear ships and submarines. Consequently, the Navy was recording the cleanup cost estimates in full at the time the ships and submarines were placed into service rather than incrementally over the useful life of the vessels, as the new standards required. This could result in an overstatement of the estimated environmental liability for the affected vessels.
- FMR accounting guidance did not completely identify all the budgetary cost elements that should be considered when determining the unpaid costs required to be included in reported environmental liability

³⁰Statement of Federal Financial Accounting Standards, No. 23, *Eliminating the Category National Defense Property, Plant, and Equipment*.

estimates.³¹ In certain circumstances, such as for estimates of remediation costs on BRAC bases, some Defense component officials told us that they were excluding certain cleanup costs once appropriations had been received to pay those costs, even though actual payments had not yet been made. As a result, certain costs (e.g., unsigned contracts) intended to be paid for with prior-year budgetary authority were not included in BRAC cleanup cost estimates, even though this is required to comply with federal accounting standards.

Defense Office of Comptroller financial management personnel told us that the FMR had not been updated in a timely manner because of personnel turnover and inadequate staffing. Subsequent to our inquiries, but prior to the release of this report, the FMR was updated to address the issues we identified, and to reflect current federal accounting standards requirements for measuring and recognizing estimated cleanup costs related to environmental liabilities. According to Defense component officials, cleanup cost estimates will be reported in accordance with the new FMR guidance no later than September 30, 2006.

Defense's Existing Policies and Procedures for Determining, Reporting, and Documenting Environmental Liability Estimates Were Not Consistently Followed

In addition to the guidance problems, certain policies and procedures included in Defense's FMR related to environmental liabilities are not being consistently followed by some military service components. Further, there continues to be a lack of adequate documentation supporting estimates of environmental liabilities, which precluded Defense's management from properly carrying out their oversight responsibilities related to the estimation process. This lack of documentation also precludes Defense's financial auditors from making a determination of the reasonableness of the liability amount recorded in the financial statements. These compliance lapses were caused in part by a lack of financial management review and oversight of the environmental liability estimation process at both the Department of Defense and the military services level. We identified several instances where the failure to follow established policies and procedures resulted in errors in the liability estimates, as follows.

- The Navy has not been estimating and reporting all costs for disposing of spent nuclear fuel produced by its nuclear ships and submarines. The

³¹Department of Defense, Financial Management Regulations (FMR) vol. 4, ch. 13, *Accounting Policy and Procedures, Environmental and Nonenvironmental Liabilities* (Washington, D.C.: October 2005).

Navy's financial reporting and program management personnel believed that the Navy's responsibility for estimating costs for spent nuclear fuel disposal stopped with the fuel's removal from the ship or submarine, since at that point the fuel became the property of Energy. The Navy's management assumed, but had not verified, that Energy was recording this liability. However, further discussions with the Navy's and Energy's financial management confirmed that the liability for disposing of nuclear fuel generated by Navy ships and submarines was not being estimated and reported by either department. Prior to the issuance of this report, Navy financial management assumed responsibility for reporting a liability for disposing of spent nuclear fuel, which Defense has estimated may be as much as \$4 billion, in its financial statements beginning in fiscal year 2006.

- The Navy's financial management was unaware that the Navy had been discontinuing the reporting of cost estimates for disposing of nuclear ships and submarines when appropriated funds were obligated, which is prior to the actual disposal costs being paid, and is contrary to federal accounting requirements. Naval Sea Systems, which has responsibility for estimating and reporting these disposal liabilities, ceased doing so once individual ships or submarines were scheduled for inactivation, a contract for disposal was executed with the Puget Sound Naval Shipyard, and funds were obligated for the cost of disposal. Because it is not unusual for the actual inactivation of a ship or submarine to be extended to meet operational demands and for the disposal activities to take over a year to accomplish, costs may not be paid for months or years after the liability estimate was omitted from the reporting process. As a result, the Navy has understated reported environmental liabilities by the unpaid costs of ships and submarines still in the process of inactivation and disposal.
- The Air Force has not been including in its environmental liability estimates all of the unpaid costs that are required by both Defense's FMR and federal accounting standards.³² Personnel at two Air Force major commands told us that estimates for completing Defense Environmental Restoration Program (DERP) efforts reflected only

³²Department of Defense, Financial Management Regulations (FMR), vol. 4, ch. 13, *Accounting Policy and Procedures, Environmental and Nonenvironmental Liabilities* (Washington, D.C.: October 2005) and Statement of Federal Financial Accounting Standards, No. 5, *Accounting for Liabilities of the Federal Government*.

those costs that had not yet been funded. Costs that had been incurred in prior years and for which funding had been received but payments had not been made were not included in the DERP estimates. These omissions were also contrary to Air Force guidance that required estimates to include “all anticipated costs required to effect the restoration of the site.”³³ Because Air Force financial management did not have a monitoring process in place to ensure that guidance was understood and being followed, the Air Force has been understating its cost estimates by the amount of incurred but unpaid prior-year costs.

- The military services are not preparing or retaining documentation that supports the consistency and adequacy of their reported environmental cleanup and disposal cost estimates. In its annual *Performance and Accountability Reports* for fiscal years 2003 through 2005, Defense has acknowledged—and independent financial auditors have reported—that inadequate supporting documentation for environmental liabilities is an ongoing material weakness in the department’s system of internal control. In addition, in recent audit reports specifically targeting environmental liability controls, various military audit agencies reported a general lack of adequate documentation to support cost estimates in the military services.³⁴ One auditor told us that environmental personnel completing or updating environmental liability estimates erroneously believed that an electronic file created by a cost estimating model was sufficient supporting documentation, even though the model did not explain or contain source documentation for variables used in the cost calculation, such as remaining capacity, usage rates, contractors estimates, or engineering studies. According to military service representatives, environmental engineers see no need to retain supporting documentation for cost estimates since management does not request or review it. Neither financial or program management nor auditors will be able to assess the reliability of environmental cost estimates until estimators develop and retain sufficient documentation to support their calculations.

³³Department of the Air Force, *Thirty Year Maximum Combined Remedial Action Operation/Long-Term Management Criteria*.

³⁴U.S. Department of Defense, Office of Inspector General, *Financial Management: Environmental Liabilities Required To Be Reported on Annual Financial Statements*, D-2004-080 (Arlington, VA: May 5, 2004) and Department of the Navy, Naval Audit Service, *Agreed-Upon Procedures Attestation Engagement of Department of the Navy General Fund, Fiscal Year 2004 Environmental Liabilities Account*, N2005-0050 (Washington, D.C.: July 15, 2005).

Defense's Internal Controls Are Inadequate to Help Ensure That All Cleanup Sites Are Included in the Environmental Liability Estimate

Even if the guidance and monitoring issues previously discussed are remedied, none of the military services have a structured process in place and working at the installation level to provide reasonable assurance that all known contaminated sites and hazardous operations are included in the reported environmental liability cost estimates. One example of such a control would be a comparison of the cleanup sites and hazardous waste operations actually being reported by specific programs on each base to a comprehensive inventory of all sites and hazardous waste operations located on each base that was prepared without regard to reporting program or Defense component use. Defense's FMR requires a reconciliation of environmental and property records, and indicates the purpose of the resulting inventory is to ensure that all disposal liabilities are recognized.³⁵ The FMR stops short of specifically requiring a comparison of the reconciled site inventory to sites included in environmental liability reporting, and no Army, Navy, or Air Force program or financial management personnel we spoke with were aware of any activity at the base level making such a comparison. As a result, contaminated sites and operations that are not included in a reporting program are at risk of not being identified and reported as required, and the related cost estimates could be understated. For example, we spoke with Defense component personnel who expressed conflicting views about responsibility for reporting cleanup costs associated with underground storage tanks physically located on a military base that contain fuel owned and managed by another Defense component. Thus, the associated liability is at risk of not being reported by any Defense component. Without a comparison of site lists as described, such an oversight would likely go undetected.

Major Uncertainties Will Affect Future Cleanup Costs and Funding Demands

Beyond the issues previously discussed that make Defense's and the federal government's environmental liability estimates unauditible, the ultimate cost of the cleanup will be affected by major uncertainties, the impact of which cannot be currently estimated. These uncertainties, which primarily involve the lack of feasible or proven remediation technologies, regulatory impediments and legal challenges to cleanup and disposal, and uncertainties as to the agencies' abilities to meet their current cost and

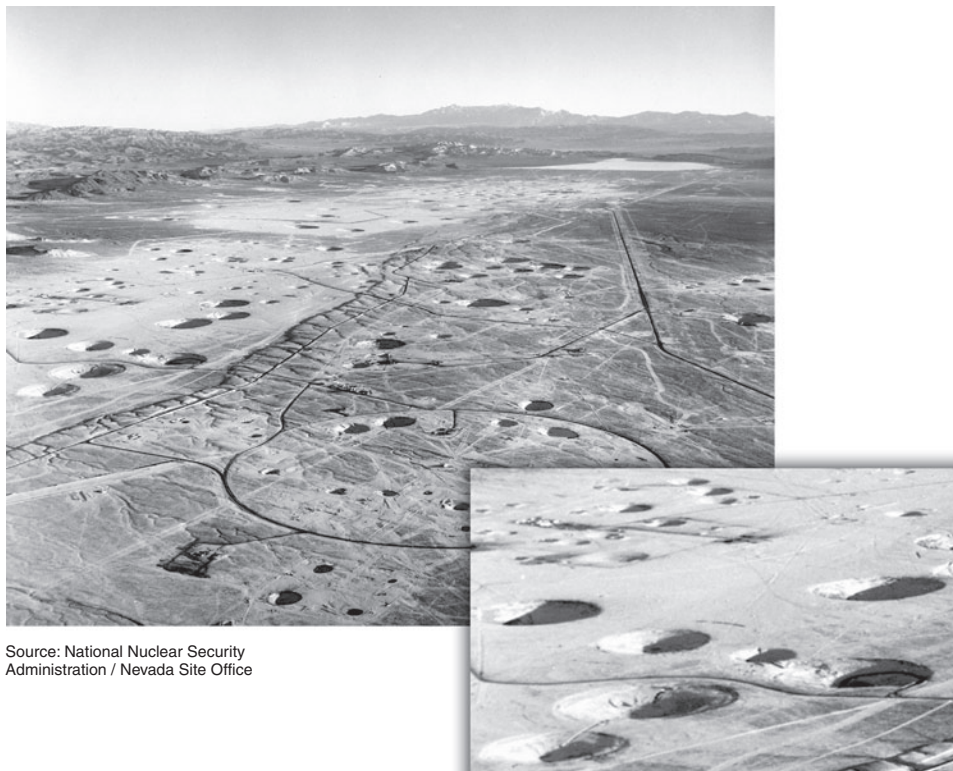
³⁵Department of Defense, Financial Management Regulations (FMR) vol. 4, ch. 13, *Accounting Policy and Procedures, Environmental and Nonenvironmental Liabilities* (Washington, D.C.: October 2005).

schedule targets, do not impact the auditability of the liability because under current federal accounting standards a potential liability that cannot be estimated but is considered at least reasonably possible to occur is not required to be recorded on the face of the financial statements, only disclosed in the notes. Both Energy and Defense currently disclose various uncertainties in the notes to their financial statements, although improvements to their disclosures are warranted at both agencies. It is important to understand the nature and extent of these uncertainties in assessing future funding demands for environmental cleanup because they have the potential to materially affect the ultimate cost and timing of cleanup activities.

Remediation Technologies for Some Sites Are Nonexistent or Uncertain

The nature and extent of contamination the federal government must clean up is complex and vast, and suitable technologies to address all of the waste do not currently exist. As stated in Energy's fiscal year 2004 *Performance and Accountability Report*, estimated cleanup costs at sites for which there is no current feasible remediation approach would be higher if some remediation were assumed for these areas, but because Energy has not identified effective remediation technologies for these sites, no basis for estimating costs is available. Energy has identified 18 significant uncertainties, at various and multiple locations, where no currently feasible remediation technology exists or the effectiveness of technologies currently being explored remains to be seen. An example of a location for which Energy reported that cleanup costs were excluded is the nuclear explosion test area at the Nevada Test Site. The Nevada Test Site, an area larger than Rhode Island, was the site of over 900 atmospheric and underground nuclear test explosions that occurred over four decades ending in 1992. These nuclear detonations left residual radioactivity, but most of the radioactivity is in highly inaccessible underground locations. According to Energy, effective, feasible remediation technologies have not yet been developed to address this widespread contamination, and Energy's fiscal year 2004 environmental liability estimate primarily for the Nevada Test Site only included an estimate of approximately \$3.3 billion for monitoring of groundwater contamination plumes, disposal of active facilities, and long-term stewardship.

Figure 8: Craters Left As A Result Of Underground Nuclear Testing At The Nevada Test Site



Source: National Nuclear Security Administration / Nevada Site Office

In other cases, potential remediation technologies have been identified, but their effectiveness has yet to be successfully demonstrated. For example, during operations at Energy's Hanford location from 1943 through 1989, Energy generated large volumes of hazardous and radioactive waste. Some of this waste was deposited directly into the ground, while some of the most hazardous and radioactive material was stored in underground tanks that have leaked contaminants into the soil. Over time, concern has developed about the impact of Hanford's waste moving through the ground and toward the Columbia River. As we have previously reported, Energy has used three main approaches to treat the groundwater near the river, but

has experienced problems with all three.³⁶ For example, one approach has been to use a chemical barrier near the Columbia River to block chromium from entering the river near major fish breeding areas.³⁷ The barrier consists of a series of wells where Energy injected a chemical into the groundwater that reacts with chromium to change it to a less hazardous and less mobile form. However, in 2004 Energy reported that the barrier was not fully effective, and that the hazardous form of chromium was detected in groundwater readings beyond the barrier. Energy is currently evaluating alternative approaches to contain the chromium or fix the barrier. Until an effective remediation technology can be identified, tested, and implemented, the ultimate cost of cleaning up this groundwater contamination remains unknown.

Regulatory Requirements and Legal Challenges Remain Unresolved

Various regulatory requirements and legal challenges also affect the ultimate cost, extent, and timing of cleanup at several sites. The primary uncertainty facing the federal government's cleanup efforts relates to the opening of the national geologic repository for high-level waste and spent nuclear fuel. The disposal of Energy's and Defense's high-level waste and spent nuclear fuel is contingent upon the opening of this repository planned for Yucca Mountain. However, multiple challenges related to the regulatory and legal requirements it must meet have caused several delays in its licensing and design. Additionally, the degree of cleanup required by regulations can vary from site to site and depend on how the land is expected to be used after it has been cleaned up. These decisions must usually be agreed upon by various federal and state agencies, with input from interested parties, such as community representatives. Even after an agreement has been signed, various parties may raise legal challenges to the agreement, the outcome of which could affect both the cost and timing of cleanup plans. Thus, it can take years to determine the final cleanup requirements for some sites. Until these issues are resolved, the ultimate cost of cleanup and disposal of the federal government's environmental contamination cannot be fully determined. The following are examples of current regulatory and legal uncertainties Energy and Defense are facing, the resolution of which could significantly impact the final cost of cleanup.

³⁶GAO, *Department of Energy: Preliminary Information on the Potential for Columbia River Contamination from the Hanford Site*, [GAO-06-77R](#) (Washington, D.C.: Nov. 4, 2005).

³⁷Chromium is toxic to fish and this portion of the Columbia River is a major salmon breeding area.

-
- Over the years, regulatory requirements and legal challenges have caused multiple delays in the licensing and design of the Yucca Mountain geologic repository, which is intended to be the nation's first high-level waste and spent nuclear fuel disposal site. For example, Energy reported that it did not meet its goal of submitting a license application for the repository to the Nuclear Regulatory Commission by the end of calendar year 2004, in part due to a July 2004 decision by the U.S. Court of Appeals to invalidate the Environmental Protection Agency's (EPA) radiation standard, which set a 10,000 year time frame in which the amount of radiation that can be released from the repository would be limited.³⁸ The court held that EPA violated section 801 of the Energy Policy Act of 1992, which required the agency to issue standards for Yucca Mountain based upon and consistent with findings by the National Academy of Sciences. In August 2005, EPA issued a proposed standard that extended protection to 1 million years to be consistent with the Academy's recommendations. Because the repository must be designed to comply with the EPA standard, approval of a revised standard is critical. Consequently, Energy acknowledged that it will not meet its goal of commencing disposal operations by 2010 but has not committed to a new target date for opening the repository. Energy acknowledged that delays in opening the repository could cause project costs to increase, including the cost of constructing the repository as well as interim storage and other costs, for the Energy and Defense locations that are expected to ship waste to Yucca Mountain. For example, officials at Energy's Savannah River location estimated that if there was a 5-year delay in the opening of the repository, the additional costs incurred for their spent nuclear fuel disposal could range anywhere from about \$50 million to \$200 million, depending on how Energy decides to deal with the fuel during such a delay.

³⁸Energy is responsible for the construction, management, and operation of the intended geologic repository at Yucca Mountain. EPA is responsible for developing site-specific standards for Yucca Mountain to protect public health and the environment from harmful exposure to the radioactive waste that would be stored and disposed of in the repository. The Nuclear Regulatory Commission is responsible for licensing Energy to construct the repository and to dispose of high-level radioactive waste and spent nuclear fuel in the repository, which includes determining whether Energy can meet EPA's standards.

Figure 9: View of an Exploratory Tunnel at Yucca Mountain



Source: U.S. Department of Energy.

- The 2005 Defense Base Closure and Realignment Commission recommended 22 major base closures and 33 major base realignments. Although cleanup costs for Defense property in prior BRAC rounds are included in Defense's environmental liabilities, some of the cleanup costs that will result from the 2005 BRAC round have not yet been estimated, such as the estimated cleanup cost of currently operational ranges with ordnance or other explosive material. In addition, the decision to realign or close a base may result in a change to its planned use and thus require a change in cleanup estimate based on those plans. For example, the cleanup requirements and therefore the cleanup costs are less if the property is expected to be used for industrial purposes than if it is to be used for residential purposes. But before planned use can be decided, Defense must determine who the next owner will be. If, as in previous BRAC rounds, most property is transferred to nonfederal ownership for economic development and other purposes, communities receiving the property transfer will likely want contamination removal.

Defense may prefer containment to save costs, thus, the adopted cleanup plan and final associated costs will often be the result of negotiation and agreement among all of the involved parties including Defense, EPA, and various community representatives. Until all of these significant new decisions are made for each site, the cost to remediate excess property as a result of the 2005 BRAC round remains uncertain.

- At the Idaho National Laboratory there is a great deal of controversy over how much buried transuranic waste Energy will have to excavate and remove from the lab's Subsurface Disposal Area, an 88-acre area where radioactive transuranic waste has been buried in shallow pits and trenches since 1952. In April 2002, the State of Idaho sued Energy over its interpretation of a 1995 settlement agreement concerning the amount of transuranic waste that must be removed from the Idaho National Laboratory. Specifically, Energy asserted that the agreement requires only certain stored waste to be removed, but the state asserted that the agreement also applied to all buried transuranic waste. In March 2003, the District Court of Idaho ruled in favor of the state and concluded that Energy was responsible for removing all transuranic waste buried or stored at the laboratory. Energy appealed, and in December 2004, the court of appeals reversed the decision and sent the case back to the district court for further consideration. Energy is currently removing selected portions of the buried waste totaling 4 acres where it has identified the highest concentrations of radioactivity and has recorded a corresponding environmental liability for this portion of the waste. However, officials indicated that the cost to excavate all 88 acres would be extremely costly and cannot be estimated. Should the state ultimately prevail, the resulting additional costs could be substantial.

Figure 10: An Excavator Removes Buried Transuranic Waste at Energy's Idaho Cleanup Location



Source: U.S. Department of Energy.

Ability to Effectively Meet Current Cost and Schedule Targets is Uncertain

Both Energy's and Defense's environmental liabilities estimates are based upon current plans and targets for accomplishing their cleanup responsibilities. However, our previous reports have identified project management weaknesses at both agencies that could hinder them from meeting these goals.³⁹ At Energy, we have previously reported that many of its major projects, including environmental cleanup projects, have experienced substantial cost overruns and delays. For example, our 2002 assessment of Energy's contract reform initiatives found that 5 of the 16 major projects we examined had more than doubled in cost—for billions of dollars in total cost overruns—and experienced more than 5 years in

³⁹See the Related GAO Reports section of this report. Many of these reports identify weaknesses with Energy's and Defense's management of their environmental cleanup programs.

delays.⁴⁰ In late 2002, Energy began implementing an accelerated cleanup plan to address the uncontrolled cost and schedule overruns that had occurred over many years. In describing this plan, Energy reported that it would reduce the total cost of the cleanup program by an estimated \$50 billion and would complete its cleanup activities by 2035—35 years earlier than called for in previous plans. While Energy has made some progress since it implemented its plan, both we and the Energy Inspector General have identified cleanup projects and activities that are behind schedule and thus may cost more than currently planned.⁴¹ Although Energy reevaluates and adjusts its environmental liability estimates each year, its history of cost and schedule overruns raises additional uncertainties as to what the ultimate cost of cleanup will be.

In addition to the processes and internal control weaknesses discussed earlier that have prevented Defense from developing an auditable estimate of its environmental liabilities, we have also previously reported on program management weaknesses at Defense that add to the uncertainty about its current estimates. For example, we previously reported that Defense had made limited progress in its program to identify, assess, and clean up sites that may be contaminated with military munitions, and that its plan to address potentially contaminated sites relied on preliminary cost estimates that can change significantly because they were developed using incomplete information.⁴² In another report, we found that the U.S. Army Corps of Engineers did not have a sound basis for determining that about 38 percent of former defense sites—sites now owned by states, local governments, and individuals and used for parks, farms, schools, and

⁴⁰GAO, *Contract Reform: DOE Has Made Progress, but Actions Needed to Ensure Initiatives Have Improved Results*, [GAO-02-798](#) (Washington, D.C.: Sept. 13, 2002).

⁴¹See for example, U.S. Department of Energy, Office of Inspector General, *Accelerated Tank Waste Retrieval Activities at the Hanford Site*, DOE/IG-706 (Washington, D.C.: Oct. 17, 2005); GAO, *Nuclear Waste: Better Performance Reporting Needed to Assess DOE's Ability to Achieve the Goals of the Accelerated Cleanup Program*, [GAO-05-764](#) (Washington, D.C.: July 29, 2005); and U.S. Department of Energy, Office of Inspector General, *National Nuclear Security Administration's Pit Disassembly and Conversion Facility*, DOE/IG-0688 (Washington, D.C.: May 3, 2005).

⁴²GAO, *Military Munitions: DOD Needs to Develop a Comprehensive Approach for Cleaning Up Contaminated Sites*, [GAO-04-147](#) (Washington, D.C.: Dec. 19, 2003).

homes—did not need further study or cleanup action.⁴³ As a result, the Corps' assessment may not be accurate, and the Corps cannot be reasonably certain that it has identified all hazards that may require further study or cleanup. These issues raise questions as to whether Defense and Energy can effectively perform the necessary cleanup work within current cost and schedule targets and thus raise additional uncertainties as to the ultimate cost of cleanup.

Energy's and Defense's Financial Disclosures Acknowledge Uncertainties, but Improvements Are Warranted

As mentioned earlier in this report, federal accounting standards require recording a liability only if the future outflow of resources is considered both probable and measurable. If one of the two conditions is not met but the future outflow of resources is considered at least reasonably possible, then it does not need to be recorded as a liability in the financial statements but should be disclosed in the notes to the financial statements. Both Energy and Defense disclose in the notes to their financial statements various uncertainties that are not included in their liability estimates because the events are not considered probable or the amount of the liability cannot be reasonably estimated. Some examples of Energy's disclosures in its notes to the fiscal year 2004 financial statements include the following.

- “The Department has identified approximately 10,400 potential release sites from which contaminants could migrate into the environment. Although virtually all of these sites have been at least partially characterized, final remedial action and/or regulatory decisions have not been made for many sites. Site-specific assumptions regarding the amount and type of contamination and the remediation technologies that will be utilized were used in estimating the environmental liability related to these sites.”
- “Cost estimates for management of the Department's high-level waste are predicated upon assumptions as to the timing and rate of acceptance of the waste by the first geologic repository. Delays in opening the repository could cause EM project costs to increase.”

⁴³GAO, *Environmental Contamination: Corps Needs to Reassess Its Determinations That Many Former Defense Sites Do Not Need Cleanup*, [GAO-02-658](#) (Washington, D.C.: Aug. 23, 2002).

-
- “Estimated cleanup costs at sites for which there is no current feasible remediation approach are excluded from the baseline estimates, although applicable stewardship and monitoring costs for these sites are included. The cost estimate would be higher if some remediation were assumed for these areas. However, because the Department has not identified effective remedial technologies for these sites, no basis for estimating costs is available. An example of a site for which cleanup costs are excluded is the nuclear explosion test area at the Nevada Test Site.”

As noted previously, the State of Idaho is currently in litigation with Energy over the amount of transuranic waste that must be removed from the Idaho National Laboratory, and in March 2003 the Idaho District Court ruled in the state’s favor. Energy did not disclose this potential liability in the notes to its fiscal year 2004 financial statements. We questioned Energy’s decision not to disclose this case in its fiscal year 2004 financial statements given that it had an adverse court ruling at the time that would seem to indicate that there was at least a reasonably possible likelihood that Energy would ultimately be required to remediate additional acreage. Energy officials stated that, at the time, the case was under appeal and they thought the likelihood that they would be required to remediate all transuranic waste within the 88 acres was remote. However, Energy did not document this conclusion, the reasons behind its conclusion, and whether its legal counsel concurred with that conclusion in its fiscal year 2004 legal representation letter.⁴⁴

Subsequent to the issuance of its fiscal year 2004 financial statements on November 15, 2004, the court of appeals reversed the decision and sent the case back to the district court for further consideration, which is still ongoing. Nonetheless, Energy disclosed this matter in the notes to its fiscal year 2005 financial statements. According to Energy officials, activities at the site to evaluate the waste in the area have indicated that the amount of waste that would have to be removed should Idaho prevail would be greater than what Energy originally estimated, and thus it documented in

⁴⁴Legal representation letters are generally prepared by the agency’s general counsel to document its evaluation of the likelihood of an unfavorable outcome by categorizing each case as probable, reasonably possible, or remote in accordance with federal accounting standards. These letters are used to inform the agency’s auditor about litigation, claims, and assessments to help the auditor determine the adequacy of the financial accounting and reporting of such matters in the agency’s financial statements. Energy uses two kinds of letters that collectively contain its legal representations.

its fiscal year 2005 legal representation letter that there was a reasonably possible likelihood of an unfavorable outcome. Energy's fiscal year 2005 financial statement disclosure noted that the State of Idaho was challenging Energy's interpretation of the 1995 settlement agreement concerning the shipment of transuranic waste from the Idaho National Laboratory. It further disclosed that, should the state prevail, the resulting costs could be substantial but Energy had not recorded a provision for such costs in its financial statements.

Because of these and other uncertainties discussed in Energy's *Performance and Accountability Report*, Energy's auditors have included an emphasis paragraph with the audit opinion since fiscal year 1999, emphasizing that the cost estimates supporting Energy's environmental liabilities are based upon assumptions regarding future actions and decisions, many of which are beyond Energy's control.⁴⁵ In essence, this highlights the fact that, should circumstances change in the future, the effects of such changes could be material.

Defense disclosed one uncertainty in the notes to its financial statements. Defense acknowledged that, because the extent of buried chemical munitions and agents is not known, the Army was unable to provide a reasonable estimate of its liability to clean up buried chemical munitions and agents.

However, Defense failed to disclose the liability implications of its 2005 BRAC round. In its September 8, 2005, report to the President, the 2005 Defense Base Closure and Realignment Commission reported that Defense will likely incur additional environmental cleanup and restoration costs resulting from these base realignment and closure activities. Since the additional costs could be significant, the lack of a discussion of the 2005 BRAC round in the notes precludes financial statement users from having a full understanding of Defense's environmental liability exposures.

Conclusions

The federal government is responsible for cleaning up environmental contamination that is both complex and widespread. The estimated cost of cleaning up this waste is substantial and will be competing for limited

⁴⁵An emphasis paragraph is explanatory and is not construed as a qualification of the auditor's opinion. It is intended to highlight circumstances of particular importance and to aid in interpreting the financial statements.

federal resources over many years. Therefore, proper reporting of the government's environmental liabilities is important to help determine priorities for cleanup and disposal activities and to appropriately consider future budgetary resources needed to carry out these activities. However, weaknesses in Defense's processes and internal controls are largely responsible for the federal government's inability to reasonably estimate or adequately support the amounts reported for its environmental liabilities. Also, significant uncertainties at both Energy and Defense surrounding how waste will be cleaned up and when it will be disposed of make it inherently impossible to fully determine the ultimate cost of cleanup; therefore, it is essential that disclosures of such uncertainties help keep policymakers informed of potential future resource needs. Without adequate policies, processes, and internal controls for identifying, estimating, recording, and disclosing its environmental liabilities, the federal government does not have sufficient information on the potential cost of addressing these liabilities for long-term fiscal planning.

Recommendations For Executive Action

To address Defense-related deficiencies, we are making the following eight recommendations. To improve internal controls over the development and reporting of environmental liabilities and to prevent recurrence of the types of problems we identified in our report, we recommend that the Secretary of Defense direct the Under Secretary of Defense (Comptroller) and the Secretaries of the Army, Navy, and Air Force, as appropriate, to

- develop, document, and implement a program for financial management review, approval, assessment, and monitoring of the estimation and reporting processes for environmental liabilities,
- improve compliance with federal accounting standards and FMR guidance and remedy the specific deficiencies we identified by
 - designing a process and controls at the department level to identify new federal accounting standards and to update the FMR for changes and additions in a timely manner,
 - reassessing its process for ensuring that all required financial statement disclosures are made, and disclosing in the notes to the financial statements for the department and for the Army, Navy, and Air Force, as appropriate, all significant uncertainties in accordance with current federal accounting standards, including the effects of the 2005 BRAC round on reported environmental liabilities,

-
- estimating, updating, and reporting the accrued environmental liability for the cost of disposing of the Navy's spent nuclear fuel,
 - implementing revised FMR guidance for recognizing cleanup costs for the Navy's nuclear ships and submarines over the estimated lives of those assets,
 - including all appropriate budget elements for reporting financial liabilities for (1) the Navy's nuclear ships and submarines, (2) the Air Force's cleanup and restoration costs, and (3) all costs intended to be paid for with prior-year budgetary authority (e.g., unsigned contracts) by the Army, Navy, and Air Force,
 - reconciling the Army's, Navy's, and Air Force's installation-level environmental records to installation-level property records as required and then using the corrected site inventories to determine that all sites with cleanup or corrective action costs and all hazardous waste operations with cleanup or closure costs are included in financial reports of environmental liabilities and all are reported by the appropriate Defense component, and
 - producing and maintaining adequate supporting documentation for Army, Navy, and Air Force environmental liabilities at all levels in accordance with internal control standards in the federal government.

To address the deficiency identified with Energy's legal representation letters, we recommend that the Secretary of Energy reassess Energy's process for ensuring that all litigation is appropriately documented in its legal representation letters, including its evaluation of the likelihood of an unfavorable outcome, the basis for its conclusion, and whether its legal counsel concurred with that conclusion.

Agency Comments and Our Evaluation

We provided a draft of this report to Defense for review and comment. In written comments, Defense's Principal Deputy Under Secretary of Defense (Comptroller) stated that Defense concurred with all eight recommendations in the report and was taking actions to correct the noted deficiencies. For example, Defense stated that the military departments have been instructed to include steps and milestones in their Financial

Improvement Plan⁴⁶ to comply with several of the recommendations. Defense also established a workgroup to improve the financial reporting of environmental liabilities, and it plans to assist the military departments in meeting the key milestones. Defense also noted that it was updating the financial statement reporting guidance in the FMR to improve its disclosures and would change some of its environmental liability accounting procedures to comply with applicable federal accounting standards and FMR guidance. Once properly implemented, these steps should significantly improve Defense's environmental liability reporting.

We received verbal comments from Energy officials on a draft of this report. Energy officials concurred with our recommendation, and stated that they will implement procedures to help ensure that all cases are appropriately documented in their legal representation letters. Specifically, Energy officials said that the headquarters program offices will now send the field offices' summary evaluations and backup documentation on each case to the office of the Chief Financial Officer in addition to the office of General Counsel. Once the office of General Counsel prepares the final legal representation letter, staff in the office of the Chief Financial Officer are to compare the cases listed in the letter with the case summaries received from the field offices to help ensure that all cases were appropriately included in the letter. If properly implemented, these actions appear responsive to the recommendation.

We are sending copies of this report to other interested congressional committees; the Secretary of Energy; the Secretary of Defense; the Under Secretary of Defense (Comptroller); and the Secretaries of the Army, the Air Force, and the Navy. Copies will be made available to others upon request. In addition, this report is available at no charge on the GAO Web site at <http://www.gao.gov>.

Please contact me at (202) 512-9508 or calboml@gao.gov if you or your staffs have any questions about this report. Contact points for our Offices

⁴⁶According to the written comments, the Department of Defense Financial Improvement and Audit Readiness Plan includes key milestones addressing the issues of financial management review, approval, and assessment of the estimation and reporting process.

of Congressional Relations and Public Affairs may be found on the last page of this report. Other GAO contacts and key contributors to this report are listed in appendix III.



Linda M. Calbom
Director
Financial Management and Assurance

Scope and Methodology

To determine the nature and extent of the federal government's reported environmental liabilities, we reviewed the *Performance and Accountability Reports* of all federal agencies that reported environmental liabilities for fiscal year 2004, the most recent completed fiscal year at the time we began our review. Because Energy's fiscal year 2004 financial statements were audited by an independent public accounting firm and determined to be reliable, we reviewed those statements, traced and verified environmental liabilities amounts to supporting schedules, and reviewed audit workpapers, where available. We otherwise used the work performed by the independent auditors and did not perform additional audit procedures to verify the completeness or accuracy of the amounts reported. Because Defense has acknowledged serious data reliability problems related to its financial systems and information, auditors did not attempt to perform audit procedures and disclaimed an opinion on Defense's fiscal year 2004 financial statements. Therefore, it was not our objective to—and we did not—audit the completeness and accuracy of Defense-reported environmental liabilities amounts. Although we have previously reported on the potential for Defense to incur costs related to voluntary restoration initiatives in conjunction with returning overseas Defense facilities to host nations, these activities are not reported as environmental liabilities in its financial statements, and we did not review its international operations or processes.¹ Since Defense-reported amounts are not reliable, we are providing them in this report for informational purposes only. We also reviewed Energy's and Defense's fiscal year 2005 *Performance and Accountability Reports* primarily to determine whether any significant new issues had arisen subsequent to the issuance of the fiscal year 2004 statements.

At Energy and Defense, we interviewed agency officials and performed site visits to obtain a better understanding of the types of environmental contamination being addressed. We met with officials at Energy headquarters and visited its three largest cleanup locations (the Hanford nuclear reservation in Washington State, the Savannah River location in South Carolina, and the Idaho National Laboratory in Idaho). For Defense, we met with program management, financial management, and financial reporting officials for the relevant environmental programs for each military service. For additional background information, we also visited Defense's Puget Sound Naval Shipyard in Washington State, which

¹GAO, *Opportunities Exist to Improve Future Comprehensive Master Plans for Changing U.S. Defense Infrastructure Overseas*, GAO-05-680R (Washington, D.C.: Jun. 27, 2005).

dismantles and disposes of nuclear ships and submarines that are being removed from service.

To determine the extent to which Energy's and Defense's processes and internal controls are adequately designed to assure estimating and reporting environmental liabilities in accordance with federal accounting standards, we interviewed Energy's financial auditors and reviewed selected workpapers prepared for its annual financial statement audit; interviewed Energy and Defense program and financial management officials at agency headquarters and at the field locations we visited; and reviewed agency documentation supporting their processes. We did not review or test detailed contractor estimates but focused on each agency's procedures for compiling and developing its environmental liability amounts. We compared Energy's and Defense's processes and internal controls to GAO's *Standards for Internal Control in the Federal Government*² and reviewed applicable federal accounting standards and guidance for the recognition and reporting of environmental liabilities.

To determine the nature and types of uncertainties that might affect the ultimate cost of Energy's and Defense's environmental cleanup efforts, we interviewed Energy and Defense program and financial management officials and reviewed supporting documentation. During interviews with agency, contractor, and state agency officials, we inquired about sites that have not been fully estimated or reported as well as other uncertainties that could affect the total cost to the federal government of cleaning up the contamination. We also reviewed Energy's and Defense's recent *Performance and Accountability Reports* for further information on disclosed uncertainties that are not estimated in their environmental liabilities balances, and reviewed our relevant prior reports. Our work was conducted from October 2004 through January 2006 and was performed in accordance with generally accepted government auditing standards.

²GAO, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1 (Washington, D.C.: November 1999).

Comments from the Department of Defense



COMPTROLLER

UNDER SECRETARY OF DEFENSE
1100 DEFENSE PENTAGON
WASHINGTON, DC 20301-1100

MAR 15 2006

Ms. Linda M. Calbom
Director
Financial Management and Assurance
U.S. Government Accountability Office
Washington, DC 20548

Dear Ms. Calbom:

This is the Department of Defense (DoD) response to the Government Accountability Office (GAO) draft report, "Environmental Liabilities: Long-Term Fiscal Planning Hampered by Control Weaknesses and Uncertainties in the Federal Government," dated February 14, 2006 (GAO Code 190133/GAO06-427). The DoD concurs with all eight recommendations in the draft report. The Department is already taking actions to correct the noted deficiencies. Our detailed response is enclosed.

The Department appreciates the opportunity to comment on the draft report. My staff point of contact is Mr. Phillip Streit. He may be reached by email at phillip.streit@osd.mil or by telephone at (703) 697-0538.

Sincerely,


J. David Patterson
Principal Deputy

Enclosure:
As stated

GAO DRAFT REPORT DATED February 14, 2006
GAO-06-427 (GAO CODE 190133)

ENVIRONMENTAL LIABILITIES: LONG-TERM
FISCAL PLANNING HAMPERED BY CONTROL
WEAKNESSES AND UNCERTAINTIES IN THE
FEDERAL GOVERNMENT'S ESTIMATES

DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATIONS

RECOMMENDATION 1: The GAO recommended that the Secretary of Defense direct the Under Secretary of Defense (Comptroller) (USD(C)) and the Military Departments, as appropriate to develop, document, and implement a program for financial management review, approval, assessment, and monitoring the estimation and reporting process for environmental liabilities.
(p.31/GAO Draft Report)

DoD Response: Concur. The Department of Defense Financial Improvement and Audit Readiness Plan includes key milestones addressing the issues of financial management review, approval, and assessment of the estimation and reporting process and we will update the plan to include a key milestone for developing a program to monitor the estimation and reporting process. The USD(C) in conjunction with the Under Secretary of Defense (Acquisition Technology & Logistics) established a workgroup to improve the financial reporting of environmental liabilities. It is a priority of this workgroup to assist the Military Departments in meeting the key milestones. The estimated completion date is June 30, 2008.

RECOMMENDATION 2: The GAO recommended that the Secretary of Defense direct the USD(C) to improve the compliance with financial accounting standards and the Department of Defense Financial Management Regulation ("DoDFMR") guidance and remedy the specific deficiencies by designing processes and controls at the Department level to identify new federal accounting standards and to timely update the FMR for changes and additions.
(p.31/GAO Draft Report)

Enclosure
Page 1 of 4

DoD Response: Concur. The Department's Office of the Deputy Chief Financial Officer (DCFO) currently has a published standard operating procedure for updating the "DoDFMR" which assigns responsibility for each chapter to a policy proponent office. The DCFO will update this standard operating procedure to require the policy proponent office to monitor the Financial Accounting Standards Advisory Board's publishing of proposed and new accounting standards. The policy proponent will be required to publish updated guidance by the effective date of the new accounting standard or publish a policy letter implementing new accounting standards when it is not feasible to update the "DoDFMR" before the effective date. The estimated completion date is September 30, 2006.

RECOMMENDATION 3. The GAO recommended the Secretary of Defense direct the USD(C) and the Military Departments, as appropriate, to improve compliance with federal accounting standards and "DoDFMR" guidance and remedy the specific deficiencies by reassessing its process for insuring all required financial statement disclosures are made, and disclosing in the notes to the financial statements for the Military Departments, as appropriate, all significant uncertainties in accordance with current federal accounting standards, including the effects of the Fiscal Year (FY) 2005 Base Realignment and Closure (BRAC) on reported environmental liabilities. (p.31/GAO Draft Report)

DoD Response: Concur. The "DoDFMR" was updated in October 2005 and specifically requires the disclosure of uncertainties in the financial statements. We are updating financial statement reporting guidance in the "DoDFMR" to specifically require the Military Departments to disclose environmental liability uncertainties regarding significant specific situations, e.g., the FY 2005 BRAC. We have also instructed the Military Departments to include a step in their Financial Improvement Plan to ensure they have processes in place to identify and disclose uncertainties regarding environmental liabilities for specific situations. The estimated completion date for updating the "DoDFMR" is August 31, 2006. The estimated completion date for implementation is June 30, 2008.

RECOMMENDATION 4. The GAO recommended that the Secretary of Defense direct the Department of the Navy (DON) to improve compliance with federal accounting standards and the "DoDFMR" guidance and remedy specific deficiencies by estimating, updating, and reporting the accrued environmental liabilities for the cost of disposing of spent nuclear fuel. (p.31/GAO Draft Report)

DoD Response: Concur. The DON had not reported the environmental liability for disposing of the spent nuclear fuel because they believed it was the responsibility of the Department of Energy. The DON has since determined that it is their responsibility for reporting the liability and is in the process of estimating

Enclosure
Page 2 of 4

the cost for disposing of the spent nuclear fuel. We have also instructed the DON to include a step in their Financial Improvement Plan to track the progress of reporting their environmental liabilities for spent nuclear fuel. The estimated completion date is March 31, 2006.

RECOMMENDATION 5. The GAO recommended that the Secretary of Defense direct the DON to improve compliance with federal accounting standards and the “DoDFMR” guidance and remedy specific deficiencies by implementing revised “DoDFMR” guidance for recognizing cleanup cost for Navy’s nuclear ships and submarines over the estimated lives of these assets. (p.31/GAO Draft Report)

DoD Response: Concur. The DON initiated action to accrue the liability for nuclear ships and submarines over the estimated useful lives of these assets upon the publishing of the revised “DoDFMR” guidance. For Navy ships and submarines placed into service on or after October 1, 1997, the DON will begin to accrue the environmental disposal liability over the life of the ships and submarines when placed into service rather than recognizing the full cost. We have also instructed the DON to include a step in their Financial Improvement Plan to track the progress of reporting their environmental liabilities of ships and submarines. The estimated completion date is March 31, 2006.

RECOMMENDATION 6. The GAO recommended that the Secretary of Defense direct the Military Departments, as appropriate, to improve compliance with federal accounting standards and the “DoDFMR” guidance and remedy the specific deficiencies by including all appropriate budget elements for reporting financial liabilities for (1) Navy’s nuclear ships and submarines, (2) Air Force’s cleanup and restoration costs, and (3) all costs intended to be paid with prior year budgetary authority (e.g., unsigned contracts) by the Military Departments. (p.31/GAO Draft Report)

DoD Response: Concur. We have instructed the Military Departments to include a step in their Financial Improvement Plan to comply with this recommendation. The estimated completion date is June 30, 2008.

RECOMMENDATION 7. The GAO recommended that the Secretary of Defense direct the Military Departments, as appropriate, to improve compliance with federal accounting standards and the “DoDFMR” guidance and remedy the specific deficiencies by reconciling the Military Department installation level environmental records to installation level property records as required and then using the corrected site inventories to determine that all sites with cleanup or closure costs are included in financial reports of environmental liabilities and all are reported by the appropriate Defense Component. (p.32/GAO Draft Report)

Enclosure
Page 3 of 4

DoD Response: Concur. We have instructed the Military Departments to include a step in their Financial Improvement plan to comply with this recommendation. The estimated completion date is June 30, 2008.

RECOMMENDATION 8. The GAO recommended that the Secretary of Defense direct the Military Departments, as appropriate, to improve compliance with federal accounting standards and the “DoDFMR” guidance and remedy the specific deficiencies by producing and maintaining adequate supporting documentation for environmental liabilities at all levels in accordance with internal control standards in the Federal Government. (p.32/GAO Draft Report)

DoD Response: Concur. We have instructed the Military Departments to include a step in their Financial Improvement Plan to comply with this recommendation. The estimated completion date is June 30, 2008.

Enclosure
Page 4 of 4

GAO Contact and Staff Acknowledgments

GAO Contact

Linda M. Calbom, (202) 512-9508 or calboml@gao.gov

Acknowledgments

In addition to the contact named above, Molly Boyle, Assistant Director; Doreen Eng, Assistant Director; Stephen Lipscomb, Assistant Director; William Bates; Jessica Gray; Mary Ann Hardy; Charles Hodge; Nancy Kintner-Meyer; Rick Kusman; Delores Lee; Jenny Li; Tom Perry; Bennet Severson; and Stan Stenerson made key contributions to this report.

Related GAO Reports

Nuclear Waste: Better Performance Reporting Needed to Assess DOE's Ability to Achieve the Goals of the Accelerated Cleanup Program. GAO-05-764. Washington, D.C.: July 29, 2005.

Securing U.S. Nuclear Materials: DOE Needs to Take Action to Safely Consolidate Plutonium. GAO-05-665. Washington, D.C.: July 20, 2005.

Opportunities Exist to Improve Future Comprehensive Master Plans for Changing U.S. Defense Infrastructure Overseas. GAO-05-680R
Washington, D. C.: June 27, 2005.

Department of Energy: Further Actions Are Needed to Strengthen Contract Management for Major Projects. GAO-05-123. Washington, D.C.: March 18, 2005.

Nuclear Waste: Absence of Key Management Reforms on Hanford's Cleanup Project Adds to Challenges of Achieving Cost and Schedule Goals. GAO-04-611. Washington, D.C.: June 9, 2004.

DOD Operational Ranges: More Reliable Cleanup Cost Estimates and a Proactive Approach to Identifying Contamination Are Needed. GAO-04-601. Washington, D.C.: May 28, 2004.

Yucca Mountain: Persistent Quality Assurance Problems Could Delay Repository Licensing and Operation. GAO-04-460. Washington, D.C.: April 30, 2004.

Nuclear Waste Cleanup: DOE Has Made Some Progress in Cleaning Up the Paducah Site, but Challenges Remain. GAO-04-457. Washington, D.C.: April 1, 2004.

Military Munitions: DOD Needs to Develop a Comprehensive Approach for Cleaning Up Contaminated Sites. GAO-04-147. Washington, D.C.: December 19, 2003.

Nuclear Waste: Challenges to Achieving Potential Savings in DOE's High-Level Waste Cleanup Program. GAO-03-593. Washington, D.C.: June 17, 2003.

Environmental Contamination: DOD Has Taken Steps to Improve Cleanup Coordination at Former Defense Sites but Clearer Guidance Is Needed to Ensure Consistency. GAO-03-146. Washington, D.C.: March 28, 2003.

Fiscal Exposures: Improving the Budgetary Focus on Long-Term Costs and Uncertainties. GAO-03-213. Washington, D.C.: January 24, 2003.

Long-Term Commitments: Improving the Budgetary Focus on Environmental Liabilities. GAO-03-219. Washington, D.C.: January 24, 2003.

Environmental Contamination: Corps Needs to Reassess Its Determinations That Many Former Defense Sites Do Not Need Cleanup. GAO-02-658. Washington, D.C.: August 23, 2002.

Environmental Contamination: Many Uncertainties Affect the Progress of the Spring Valley Cleanup. GAO-02-556. Washington, D.C.: June 6, 2002.

Waste Cleanup: Status and Implications of DOE's Compliance Agreements. GAO-02-567. Washington, D.C.: May 30, 2002.

Nuclear Waste: Technical, Schedule, and Cost Uncertainties of the Yucca Mountain Repository Project. GAO-02-191. Washington, D.C.: December 21, 2001.

Environmental Liabilities: Cleanup Costs From Certain DOD Operations Are Not Being Reported. GAO-02-117. Washington, D.C.: December 14, 2001.

Environmental Contamination: Cleanup Actions at Formerly Used Defense Sites. GAO-01-557. Washington, D.C.: July 31, 2001.

Nuclear Cleanup: DOE Should Reevaluate Waste Disposal Options Before Building New Facilities. GAO-01-441. Washington, D.C.: May 25, 2001.

Nuclear Waste: Agreement Among Agencies Responsible for the West Valley Site Is Critically Needed. GAO-01-314. Washington, D.C.: May 11, 2001.

Environmental Liabilities: DOD Training Range Cleanup Cost Estimates Are Likely Understated. GAO-01-479. Washington, D.C.: April 11, 2001.

Nuclear Waste: DOE's Advanced Mixed Waste Treatment Project--Uncertainties May Affect Performance, Schedule, and Price. RCED-00-106. Washington, D.C.: April 28, 2000.

GAO's Mission

The Government Accountability Office, the audit, evaluation and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday, GAO posts newly released reports, testimony, and correspondence on its Web site. To have GAO e-mail you a list of newly posted products every afternoon, go to www.gao.gov and select "Subscribe to Updates."

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are \$2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. Government Accountability Office
441 G Street NW, Room LM
Washington, D.C. 20548

To order by Phone: Voice: (202) 512-6000
TDD: (202) 512-2537
Fax: (202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm

E-mail: fraudnet@gao.gov

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Gloria Jarmon, Managing Director, JarmonG@gao.gov (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, D.C. 20548

Public Affairs

Paul Anderson, Managing Director, AndersonP1@gao.gov (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, D.C. 20548