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Report to the Chairman, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives

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WASTE CLEANUP

Status and Implications of DOE's Compliance Agreements

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Contents

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Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

May 30, 2002

The Honorable James C. Greenwood
Chairman, Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
House of Representatives

Dear Mr. Chairman:

The Department of Energy (DOE) spends between $6 billion and $7 billion annually to store, clean up, and monitor nuclear and hazardous waste at its sites around the country. This waste is primarily a result of more than 50 years of producing material for the nation's nuclear weapons program. It ranges from millions of gallons of high-level liquid radioactive waste in underground storage tanks to solvents, oils, and hazardous chemicals in covered pits and trenches. At many of its sites, DOE has had difficulty making significant progress on the cleanup, particularly for the most dangerous wastes. Until recently, DOE's plan for cleaning up every site was expected to cost a total of about $220 billion and take at least 70 years.

The processes that govern the cleanup at DOE's nuclear waste sites are complicated, involving multiple laws, agencies, and administrative steps. DOE's Office of Environmental Management (EM) is responsible for much of the actual cleanup activity, which is carried out primarily under two federal laws—the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), and the Resource Conservation and Recovery Act of 1976, as amended (RCRA). CERCLA addresses the cleanup of hazardous substances at inactive or abandoned sites, some of which are listed on the National Priorities List of the nation's most serious hazardous waste sites; RCRA regulates the treatment, storage, and disposal of hazardous waste and the cleanup of hazardous waste released from covered facilities. Various federal and state agencies have jurisdiction over environmental and health issues involved with the cleanup and are therefore involved in regulating and overseeing DOE's activities. Over the years, much of the cleanup activity has been implemented under compliance agreements between DOE and these

agencies.[1] Compliance agreements provide for establishing legally enforceable schedule milestones that govern the work to be done. Regulators and DOE can negotiate to amend or modify the agreements, including extending or eliminating milestone dates. Regulators can also impose monetary or other penalties for missing milestones. Some agreements cover virtually all cleanup activities at a site, while others cover just a portion of the activities. Most of DOE's major sites have more than one agreement in place.

Because the compliance agreements are so varied and numerous, their effect on DOE's cleanup program can be difficult to ascertain. You asked us to address four questions with regard to these agreements:

- What are the major types of compliance agreements?
- What progress is DOE making in complying with milestones specified in the agreements?
- To what extent is the cost to comply with these agreements reflected in the DOE budget submitted to the Congress?
- To what extent do these agreements allow DOE to prioritize work across sites according to the relative risk posed by the various wastes?

As we were conducting our work, the Secretary of Energy announced a new DOE initiative aimed at improving management of the cleanup program, shortening the program's life by at least 30 years, and reducing program costs by at least $100 billion. Under this initiative, DOE would accelerate cleanup projects at some sites; revise other cleanup plans, such as reclassifying certain waste to different risk categories to speed cleanup and reduce cost; and concentrate funding more on cleanup and less on maintenance and non-cleanup activities. Because the detailed proposals to come from this initiative were still being developed at the time of this

[1] In this report, we use the term "compliance agreement" or "agreement" to mean any legally enforceable document containing milestones defining cleanup activities that DOE must achieve by specified or ascertainable dates. The term includes, but is not limited to, Federal Facility Agreements, Interagency Agreements, settlement agreements, consent orders, and compliance orders. It does not include federal and state environmental requirements that are not implemented by compliance agreements. Also, some cleanup work is required in certain of DOE's RCRA permits that authorize waste treatment operations. We did not include RCRA permits in our study because (1) the great majority of DOE's cleanup work is covered by compliance agreements and (2) cleanup work required by RCRA permits is generally also included under the compliance agreements at those sites. Also in this report, we use the term "regulators" to mean those federal and state agencies that are parties to DOE's compliance agreements.

report, we cannot determine specifically how the existing compliance agreements will affect DOE's ability to implement the new initiative. As agreed with your office, however, we do offer some general observations about the possible implications of compliance agreements on DOE's efforts to improve its cleanup program.

Among the steps taken to respond to this request, we administered a questionnaire to DOE's sites with compliance agreements. We also conducted fieldwork at DOE headquarters and four of the department's largest environmental management program offices—the Richland, Idaho, Oak Ridge, and Savannah River operations offices. For a complete discussion of our scope and methodology, see appendix III.

Results in Brief

There are three main types of compliance agreements governing cleanup at DOE's sites: (1) agreements required by CERCLA to address cleanup of federal sites on EPA's National Priorities List of the nation's most serious hazardous waste sites or by RCRA to address treatment and storage of mixed hazardous and radioactive waste at DOE facilities, (2) court-ordered agreements resulting from lawsuits initiated primarily by states, and (3) other agreements, such as state administrative orders enforcing state hazardous waste management laws, that do not fall into the first two categories. The 70 compliance agreements we identified are in place at 23 DOE waste cleanup sites, which together account for about 74 percent of DOE's projected total cleanup costs. Many large DOE installations, such as the Hanford site in Washington State and the Savannah River site in South Carolina, have all three types of agreements. In total, the 70 agreements contain almost 7,200 separate milestones, which range from requiring a specific cleanup activity, such as remediating groundwater contamination in a given area, to requiring that a step be completed that will contribute to eventual cleanup, such as obtaining a permit.

Through the end of fiscal year 2001, DOE had completed more than 4,500 milestones, although for several reasons, the number of milestones completed is not a good measure of cleanup progress. First, many of the milestones are administrative in nature, such as issuing a report. Second, some agreements allow for adding more milestones as time goes on, and because the total number of milestones associated with those agreements is not yet known, the relative progress made is difficult to determine. Finally, many of the milestones not yet due involve some of the most technically complex and costly cleanup work to be undertaken. DOE met the original milestone date for about 80 percent of the completed milestones. When DOE missed a schedule milestone, regulators seldom

exercised their authority to impose penalties and they almost always renegotiated milestone deadlines if DOE requested that they do so. Regulators sometimes required DOE to perform additional work sooner than had been planned in addition to or instead of paying a monetary penalty. Regulators at the four sites we visited indicated that while they generally have been willing to be collaborative and flexible about changing milestone dates thus far, adequate funding of the cleanup program was essential to their continued flexibility. At one site we visited, we found indications that DOE's concerns about making progress led it to choose not to pursue potentially less expensive ways to accomplish certain tasks, because these alternatives would cause DOE to miss a sensitive or significant milestone.

The cost of complying with these agreements is not specifically identified in the DOE budget submitted to the Congress. Individual DOE sites include the cost of compliance when preparing their initial budget requests, but as DOE headquarters officials adjust individual site estimates to reflect national priorities and to reconcile various competing demands, the final budget request does not identify what portion of the request is intended to address compliance requirements. DOE is not required to develop or present this information to the Congress. The President's budget typically states that the DOE funding requested is sufficient to substantially comply with compliance agreements, but does not state the amount of funding needed for compliance. Even if it were possible to identify this amount in the final budget, the figure would have limited significance, because sites' compliance estimates are based primarily on the expected size of the budget. If the funding sites receive is insufficient to accomplish all of the compliance activities planned for that year, sites must decide which activities to defer to future years. In contrast, if sites receive more funding than anticipated in a particular year, they have an opportunity to increase the amount of money spent on compliance requirements.

Compliance agreements are site-specific and are not intended to provide a mechanism for DOE to use in prioritizing risks among the various sites. The agreements reflect local DOE and community priorities for addressing environmental contamination at individual sites and were not developed to consider environmental risk from a DOE-wide perspective. DOE has made several attempts to develop a risk-based methodology across its sites, but has not succeeded because of problems such as its failure to integrate any of the approaches into the decision-making process. Rather than prioritize risk across sites, DOE has attempted to provide a relatively stable amount of funding at each site from year to year and generally allow local DOE

managers and the community to determine the priorities for sequencing work at each site. However, DOE's current initiative for improving the program calls for such a risk-based approach. A central component of this approach includes developing risk-reduction priorities and concentrating its efforts on activities that contribute to risk reduction. DOE's environmental management program is currently evaluating how best to proceed in developing the risk-based strategy. Because this effort is currently underway, it is too early to determine if it will yield results that regulators and other stakeholders at the various sites can accept as reliable.

Compliance agreements have not been a barrier to previous DOE management improvement initiatives, but it is not clear if the compliance agreements will be used to oppose DOE's latest initiative, which could have a potentially greater impact on cleanup approaches and funding levels than prior initiatives. DOE's past management improvement initiatives generally have not involved significant changes in cleanup approach or significant reductions in funding at individual sites. For example, DOE's contract reform initiative did not prescribe technical changes to cleanup approaches and the privatization initiative did not result in significant reductions in funding. Regulators generally supported these initiatives, saying that they support efforts to implement faster, less costly ways to reduce the environmental risks at the sites, as long as DOE's approach did not reduce funding for individual sites. DOE's recent initiative, however, has the potential to alter the funding balance among DOE sites. In some cases it involves potential changes in technology or approach that would result in leaving more waste on site than currently planned and thus could significantly reduce cleanup costs. In other cases it could allocate funding using a greater emphasis on risk reduction, which could shift funding among sites. Regulators told us that they would be opposed to receiving reduced funding at their individual sites and might not be willing to modify the compliance agreements to further extend schedule milestones. DOE generally did not involve the regulators in developing its reform initiative, but is now coordinating with regulators as it develops implementation strategies for each site. Therefore, it is too early to tell if the regulators will support these changes to site cleanup programs.

We provided a copy of our draft report to DOE for review and comment. DOE responded that our draft report accurately presented information on the current status of compliance agreements and generally agreed with the findings of the report. DOE's complete comments are presented in appendix II.

Background

DOE is responsible for a nationwide complex of facilities created during World War II and the Cold War to research, produce, and test nuclear weapons. Much of the complex is no longer in productive use, but contains vast quantities of nuclear and hazardous waste and other materials related to the production of nuclear material. Since the 1980s, DOE has been planning and carrying out activities around the complex to clean up, contain, safely store, and dispose of these materials. It is a daunting challenge, involving the development of complicated technologies, costing about $220 billion, and expecting to take 70 years or longer. DOE has reported completing its cleanup work at 74 of the 114 sites in the complex, but those were small and the least difficult to deal with. The sites remaining to be cleaned up present enormous challenges to DOE.

DOE's cleanup program is carried out primarily under two environmental laws: the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, and the Resource Conservation Recovery Act of 1976, as amended. Under section 120 of CERCLA, EPA must, where appropriate, evaluate hazardous waste sites at DOE's facilities to determine whether the waste sites qualify for inclusion on the National Priorities List, EPA's list of the nation's most serious hazardous waste sites. For each facility listed on the National Priorities List, section 120(e) (2) of CERCLA requires DOE to enter into an interagency agreement with EPA for the completion of all necessary remedial actions at the facility. The interagency agreement must include, among other things, the selection of and schedule for the completion of the remedial action. Interagency agreements are revised, as necessary, to incorporate new information, adjust schedules, and address changing conditions. These agreements often include the affected states as parties to the agreements. These agreements may be known as Federal Facility Agreements or Tri-Party Agreements. Under amendments to RCRA contained in section 105 of the Federal Facility Compliance Act of 1992, DOE generally must develop site treatment plans for its mixed-waste sites.[2] These plans are submitted for approval to states authorized by EPA to perform regulatory responsibilities for RCRA within their borders or to EPA if the state does not have the required authority. Upon approval of the treatment plans, the state or EPA must issue an order requiring

[2] Mixed wastes are wastes that contain both radioactive materials subject to the Atomic Energy Act and hazardous wastes, such as degreasing solvents.

compliance with the approved plan. The agreements are generally known as Federal Facility Compliance orders.

DOE carries out its cleanup program through the Assistant Secretary for Environmental Management and in consultation with a variety of stakeholders. The Assistant Secretary directs DOE's cleanup program at those sites under her direct control, including Hanford, Washington; Idaho Falls, Idaho; Savannah River, South Carolina; Rocky Flats, Colorado; and Fernald, Ohio; and is also responsible for the cleanup programs at other DOE sites, including Oak Ridge, Tennessee; the Nevada Test Site, Nevada; and Los Alamos National Laboratory, New Mexico. Many other stakeholders are involved in the cleanup. These include the federal EPA and state environmental agencies, county and local governmental agencies, citizen groups, advisory groups, Native American tribes, and other organizations. In most cases, DOE's regulators are parties to the compliance agreements.[3] Other stakeholders advocate their views through various public involvement processes including site-specific advisory boards.

Compliance Agreements Are of Three Main Types

The 70 compliance agreements at DOE sites vary greatly but can be divided into three main types: (1) 29 are agreements specifically required by CERCLA to address cleanup of federal sites on EPA's national priorities list of the nation's worst hazardous waste sites or by RCRA to address the management of hazardous waste or mixed radioactive and hazardous waste at DOE facilities, (2) 6 are court-ordered agreements resulting from lawsuits initiated primarily by states, and (3) 35 are other agreements, including state administrative orders enforcing state hazardous waste management laws. All of DOE's major sites have at least one compliance agreement in place, and many of these sites have all three types of agreements. Regardless of type, the agreements all contain enforceable milestones that DOE has agreed to meet. Collectively, as of December 2001, the 70 agreements had almost 7,200 schedule milestones.[4] The milestones range from completing a report or obtaining a permit to

[3] In a few instances, other stakeholders have become signatories to compliance agreements in the settlement of ongoing litigation brought against DOE.

[4] Five of the agreements containing 130 milestones were completed and are no longer active. For the remaining agreements, the number of milestones will increase over time because some of the agreements provide for setting milestone dates periodically over the life of the agreements rather than trying to establish all of the milestone dates at the beginning of the agreements.

finishing small cleanup actions or major cleanup projects. Table 1 shows, for each type of agreement, the number of sites and the number of schedule milestones they contain. See appendix I for a complete list of the 70 compliance agreements and information on the schedule milestones they contain.

Table 1: Types of DOE Compliance Agreements and Related Schedule Milestones

Type of agreement	Number of agreements	Number of sites	Number of enforceable milestones
Agreements specifically required to implement CERCLA and RCRA requirements	29	20	5,251
Court-ordered agreements resulting from lawsuits	6	6	146
All other agreements	35	12	1,789
Total	**70**	**23**[a]	**7,186**

[a]The numbers in this column do not add because many DOE sites have more than one agreement.

Source: GAO analysis of DOE data.

Agreements of the first type—those specifically required by CERCLA or by RCRA—are in effect at all of DOE's major sites. They tend to cover a relatively large number of cleanup activities and have the majority of schedule milestones that DOE must meet. Even within this category of agreements, however, the number of milestones in a particular agreement varies widely. For example, the Tri-Party Agreement at the Hanford site, which implements both CERCLA and RCRA requirements, contains 951 milestones, and more milestones will be added in the future. The agreement addresses nearly all of the cleanup work and many administrative processes to be completed at the site over the next 70 years. At another site, the agreement implementing CERCLA requirements at DOE's Brookhaven National Laboratory, New York, contains 63 milestones and more milestones will be added in the future. This agreement also addresses most of the cleanup activities that will occur at that site. Several factors can influence the number of milestones in an agreement, including the extent of environmental contamination and the preferences of the regulators.

Agreements that implement court-ordered settlements exist at only a few DOE sites, tend to be focused on a specific issue or concern, and have fewer associated schedule milestones. These agreements are typically between DOE and states. The issues addressed by the agreements ranged

from treating high-level waste so it could be disposed of outside the state to submitting permit applications for treating, storing, and disposing of hazardous wastes in specific locations. For example, at the Idaho National Engineering and Environmental Laboratory, a settlement agreement containing 33 milestones was signed that, among other things, established a schedule for removing used ("spent") nuclear fuel from Idaho. The agreement was between DOE, the state of Idaho, and the U.S. Navy, because spent nuclear fuel from Navy ships is stored at the Idaho Falls site. The settlement agreement resolved a long-standing dispute between Idaho and DOE about shipping waste in and out of the state.

The remaining agreements are based on either federal or state environmental laws and address a variety of purposes, such as cleaning up spills of hazardous waste or remediating groundwater contamination, and have a wide-ranging number of milestones. For example, an agreement at DOE's Fernald, Ohio, site contains only four milestones and addresses neutralizing and removing hazardous waste at the site. In contrast, an agreement at the Nevada Test Site contains 464 milestones and addresses identifying locations of potential contamination and implementing corrective actions and also implementing specific sampling and monitoring requirements.

Most Milestone Dates Have Been Met, but Meeting Milestones Is Not a Good Measure of Cleanup Progress

DOE reported completing 4,558 of the 7,186 milestones in these agreements as of December 2001, about 80 percent of them by the time originally scheduled in the agreements. Many of the milestones completed either have been administrative, such as issuing a report, or have involved completing some kind of step in the cleanup process, such as conducting certain tests. Although such process steps may be important in arriving at eventual cleanup, it is unreliable to use them to judge how much has been accomplished in actually cleaning up the sites. When DOE misses a milestone, regulators have several options, including negotiating a new date or assessing a penalty. Thus far, regulators have generally been willing to negotiate extensions when DOE found itself unable to complete a milestone on time, approving about 93 percent of DOE's requests for milestone changes. In 13 cases, regulators (generally the EPA) took enforcement actions for not meeting a milestone date. The 13 enforcement actions resulted in DOE making $1.8 million in monetary payments and about $4 million in other penalties (such as added work requirements), and were for problems such as delaying the construction of a mixed-waste laboratory or the selection of a method to remove and treat contamination from soil. At the sites we visited, regulators said that so far, they had been willing to take a collaborative and flexible approach to extending

milestones. However, regulators said that they generally were unwilling to extend milestones just to accommodate lower funding levels by DOE. At one site, we found instances in which this concern had grown to the point that DOE decided to adhere to a sensitive milestone rather than to propose using a less expensive approach that would have taken longer.

DOE Completed Most Schedule Milestones on Time

DOE reported completing about two-thirds of the 7,186 milestones contained in its compliance agreements as of December 2001. Of the 4,558 milestones completed, 3,639, or about 80 percent, were finished by the original due date for the milestone. The remainder of the completed milestones were finished either after the original due date had passed or on a renegotiated due date, but DOE reported that the regulators considered the milestones to be met. Currently, DOE has agreed to complete at least 2,400 additional milestones in the future. However, the actual number of milestones DOE will need to complete will likely be higher, as milestones will be added with changes in cleanup strategies or as new work is identified.[5]

Most of the milestones DOE must meet are contained in the compliance agreements at its six largest sites—Hanford, Savannah River, Idaho Falls, Rocky Flats, Oak Ridge, and Fernald. These six DOE sites are important because about two-thirds of DOE's cleanup funding goes to them. These sites reported completing a total of 2,901 of their 4,262 milestones and met the original completion date for the milestones an average of 79 percent of the time. As table 2 shows, this percentage varied from a high of 95 percent at Rocky Flats to a low of 47 percent at Savannah River. Besides the 1,334 milestones currently yet to be completed, additional milestones will be added in the future.

[5] The total number of milestones remaining to be completed cannot be determined because the number of milestones changes over time as milestones are added, dropped, or combined.

Table 2: Information on Compliance Agreement Milestones at DOE's Six Largest Cleanup Sites

Dollars in millions					
Site and state	Current EM lifecycle cleanup estimate	Number of enforceable milestones[a]	Number of milestones completed	Number of milestones completed on original date[b]	Percent of completed milestones meeting original due date
Hanford (including Office of River Protection), Washington	$62,097	1,080	825	743	90
Savannah River, South Carolina	37,809	714	556	264	47
Idaho Falls, Idaho	27,881	428	334	312	93
Oak Ridge, Tennessee	8,456	846	513	360	70
Rocky Flats, Colorado	7,705	119	62	59	95
Fernald, Ohio	3,341	1,075	611	558	91

[a]The total number of milestones is not yet known because at some sites, many milestones will be added in the future as cleanup strategies change, new schedules are set, and new work is defined.

[b]The number of milestones completed on the original due date is the total of all milestones satisfactorily completed by the original date DOE agreed to with regulators. Those milestones completed on other than the original due date were generally not considered missed milestones because the milestone dates were either extended or renegotiated with regulators.

Source: GAO analysis of DOE data.

Number of Completed Milestones Is Not a Good Measure of DOE's Cleanup Progress, but Milestones Are Useful to Regulators

For several reasons DOE's success in completing milestones on time is not a good measure of progress in cleaning up the weapons complex. Specifically:

- Many of the milestones do not indicate what cleanup work has been accomplished. For example, many milestones require completing an administrative requirement that may not indicate what, if any, actual cleanup work was performed. At DOE's six largest sites, DOE officials reported that about 73 percent of the 2,901 schedule milestones completed were tied to administrative requirements, such as obtaining a permit or submitting a report.
- Some agreements do not have a fixed number of milestones, and additional milestones are added over time as work scope is more fully defined. For example, one of Idaho's compliance agreements establishes milestones for remedial activities after a record of decision[6] has been signed for a given work area. Four records of decision associated with the

[6] A record of decision is a document used to select the method of remedial action to be implemented at a site following the completion of a feasibility study or an environmental impact statement.

agreement have not yet been approved. Their approval will increase the number of enforceable milestones required under that agreement. Because the total number of milestones associated with those types of agreements is not yet known, DOE's overall progress in accomplishing the cleanup is difficult to determine.

- Many of the remaining milestones are tied to DOE's most expensive and challenging cleanup work, much of which still lies ahead. Approximately two-thirds of the estimated $220 billion cost of cleaning up DOE sites will be incurred after 2006. DOE has reported that the cleanup activities remaining to be done present enormous technical and management challenges, and considerable uncertainties exist over the final cost and time frame for completing the cleanup.

Although schedule milestones are of questionable value as a measure of cleanup progress, the milestones do help regulators track DOE's activities. Regulators at the four sites we visited said that the compliance agreements they oversee and the milestones associated with those agreements provide a way to bring DOE into compliance with existing environmental laws and regulations. They said the agreements also help to integrate the requirements that exist under various federal laws and allow regulators to track annual progress against DOE's milestone commitments.

Regulators Have Generally Been Willing to Accommodate Delayed or Missed Milestones

Regulators have generally been flexible in agreeing with DOE to change milestone dates when the original milestone cannot be met. DOE received approval to change milestone deadlines in over 93 percent of the 1,413 requests made to regulators. Only 3 percent of DOE's requests were denied. Regulators at the four sites we visited told us they prefer to be flexible with DOE on accomplishing an agreement's cleanup goals. For example, they generally expressed willingness to work with DOE to extend milestone deadlines when a problem arises due to technology limitations or engineering problems. Because regulators have been so willing to adjust milestones, DOE officials reported missing a total of only 48 milestones, or about 1 percent of milestones that have been completed.

Even in those few instances where DOE missed milestone deadlines and regulators were unwilling to negotiate revised dates, regulators have infrequently applied penalties available under the compliance agreements. DOE reported that regulators have taken enforcement actions only 13 times since 1988 when DOE failed to meet milestone deadlines. These enforcement actions resulted in DOE paying about $1.8 million in monetary penalties, as shown in table 3.

Table 3: Number of Compliance Agreement Missed Milestones and Monetary Penalties Paid at DOE Sites

Site and state	Milestones missed	Enforcement actions taken	Monetary penalty paid
Hanford, Washington	13	2	$100,000[a]
Idaho Falls, Idaho	4	2	970,000[b]
Portsmouth, Ohio	2	2	292,000
Fernald, Ohio	7	3	250,000
Oak Ridge, Tennessee	2	2	100,000
Rocky Flats, Colorado	2	2	100,000
Total	**30**	**13**	**$1,812,000**

[a]Hanford regulators recently levied a monetary penalty of $5,000 for the first week and $10,000 for each additional week that DOE missed a July 31, 2001, milestone to start construction of a waste treatment facility. However, regulators said they will cancel the penalty if DOE meets a new milestone date set for the end of this year. Therefore, this monetary penalty is not included in table 3.

[b]In April 2002, DOE agreed to pay $800,000 for missing a milestone requiring submission of scope of work documents for one of the site's waste burial sites. As of the time of this report, DOE had not yet paid the penalty. Therefore, this monetary penalty is not included in table 3.

Source: GAO analysis of DOE data.

In addition to or instead of regulators assessing monetary penalties, several DOE sites agreed to other arrangements valued at about $4 million. For example, for missing a milestone to open a transuranic[7] waste storage facility at the Rocky Flats site, the site agreed to provide a $40,000 grant to a local emergency planning committee to support a chemical safety in schools program. At the Oak Ridge site, because of delays in operating a mixed waste incinerator, site officials agreed to move up the completion date for $1.4 million worth of cleanup work already scheduled. Also, at three sites—Paducah, Kentucky; Lawrence Livermore Main Site, California; and Nevada Test Site, Nevada—the regulators either did not impose penalties for missed milestones or the issue was still under discussion with DOE.

Regulators May Be Less Flexible if Level of Effort Declines

While the consequences so far of not meeting schedule milestones have been few, regulators at individual sites may be less tolerant if DOE's level of effort declines at their site. Regulators at the four sites we visited told us while they were willing to renegotiate milestone deadlines for technical uncertainties, they were far less inclined to be flexible if delays occurred

[7] Transuranic waste contains man-made radioactive elements with atomic numbers higher than that of uranium, such as plutonium.

because DOE did not provide the funding needed to accomplish work by the dates agreed to in the compliance agreements. The federal and state regulators told us that they prefer to be flexible and work with DOE to renegotiate milestone deadlines that will allow DOE to develop appropriate strategies to accomplish the work. However, these regulators also noted that a lack of funding was not a valid reason for DOE to avoid meeting its compliance requirements.

At DOE's Idaho Falls site, DOE has chosen not to pursue potentially less expensive ways to accomplish cleanup work in order to comply with a court-ordered milestone for shipment of wastes off-site. For example, DOE agreed with its regulators to characterize and prepare for shipment off-site about 15,000 barrels of untreated transuranic waste by December 31, 2002. This milestone is part of an agreement that also allows separate shipments of spent nuclear fuel from navy ships to be received at DOE's Idaho Falls site. According to a February 1999 report by its inspector general, DOE could save about $66 million by deferring the processing and shipment off-site of the transuranic waste until a planned on-site treatment facility was completed, thus reducing the waste volume and cost to prepare it for shipment.[8] But doing so would have caused DOE to miss the deadline set in the site's compliance agreement to ship the waste from the state. Although missing the deadline carries no monetary penalties under this agreement, missing it would allow the state to suspend shipments of DOE spent nuclear fuel into the Idaho site for storage. To avoid this possibility, DOE decided not to wait until March 2003 or later, when DOE estimated a new treatment facility would be operational to prepare the waste for shipment at a substantially reduced cost. Instead, DOE chose to comply with the milestone to characterize, repackage, and ship the waste without treatment, even though it was the more expensive option.

[8] Although DOE generally agreed with the cost savings presented in the inspector general's report in 1999, DOE is now stating that the inspector general's analysis of cost savings was incomplete because the analysis did not consider additional costs associated with suspending spent nuclear fuel shipments.

DOE's Budget Request Does Not Identify the Funding Needed to Meet Compliance Requirements

The president's budget proposal for DOE, which is the version of the DOE budget submitted to the Congress, does not specifically identify the cost of complying with compliance agreements. DOE is not required to provide this information. As part of formulating their budget requests for DOE headquarters, individual DOE sites go through a process that includes developing compliance estimates.[9] However, in the process that DOE headquarters uses to finalize the DOE-wide budget request, the site-level estimates become absorbed without specific identification into broader budget considerations that revolve around DOE-wide funding availability and other needs. As DOE headquarters officials adjust the budget amounts in the process of reconciling various competing funding needs, the final budget submitted to the Congress has, with few exceptions, no clear relationship to the amounts sites estimated were needed to fund compliance requirements. Even if it were possible to trace this relationship in the final budget, the figure would have limited significance, because sites' compliance cost estimates are based primarily on the expected size of the budget. If the funding sites receive is insufficient to accomplish all of the compliance activities planned for that year, sites must decide which activities to defer to future years. If sites receive more funding than anticipated in a particular year, they have an opportunity to increase the amount of money spent on compliance requirements.

Cost of Compliance Requirements Is Not Identified in the Budget Submitted to the Congress

The president's budget submitted to the Congress does not provide information on the amount of funding requested for DOE's compliance requirements. DOE sites prepare budget estimates that include compliance cost estimates and submit them for consideration by DOE headquarters. DOE headquarters officials evaluate individual site estimates and combine them into an overall DOE-wide budget, taking into account broader considerations and other priorities that DOE must address as part of the give and take of the budget process. The budget sent to the Congress has summary information on DOE's programs and activities, but it provides no information on the portion of the budget needed to fund compliance requirements. DOE is not required to develop or present this information to the Congress. The president's budget typically states that the DOE funding requested is sufficient to substantially comply with compliance

[9] Sites develop estimates of the compliance cost associated with compliance agreements, as well as federal, state, or local laws and regulations. In this report, compliance costs are limited to those costs associated with DOE's compliance agreements.

agreements, but the total amount of funding needed for compliance is not developed or disclosed.

Officials at DOE headquarters told us that they did not think information on funding to meet compliance requirements was needed in the president's budget. They noted that budget guidance from the Office of Management and Budget does not require DOE to develop or present information on the cost of meeting compliance requirements, and they said doing so for the thousands of milestones DOE must meet would be unnecessarily burdensome. They said their approach has been to allocate funds appropriated by the Congress and make it the sites' responsibility to use the funds in a way that meets the compliance agreement milestones established at the site level.

Compliance Estimates at the Site Level Mainly Reflect Anticipated Budget Levels

Although DOE is not required to identify its compliance costs in the budget request that goes to the Congress, DOE does develop this information at the site level. This occurs because many of the compliance agreements require DOE to request sufficient funding each year to meet all of the requirements in the agreements. Also, DOE must respond to Executive Order 12088, which directs executive agencies to ensure that they request sufficient funds to comply with pollution control standards. Accordingly, each year DOE's sites develop budget estimates that also identify the amount needed to meet compliance requirements.

The sites' process in developing these compliance estimates shows that a compliance estimate is a flexible number. DOE sites develop at least two budget estimates each year, and each estimate includes an amount identified as compliance requirements. Two budget estimates typically completed by the sites each year are the "full requirements" estimate and the "target" estimate. The full requirements estimate identifies how much money a site would need to accomplish its work in what site officials consider to be the most desirable fashion. The target estimate reflects a budget strategy based primarily on the amount of funding the site received the previous year and is considered a more realistic estimate of the funding a site can expect to receive. For each of these budget estimates, DOE sites also include an estimate of their compliance costs. As a result of this process, DOE sites usually have different estimates of their compliance costs for the same budget year. Table 4 shows how the compliance cost estimates related to compliance agreements changed under different budget scenarios.

Table 4: Cost of Meeting Compliance Requirements under Two Different Budget Scenarios at Four DOE Sites, Fiscal Year 2002

Dollars in millions				
	Full requirements estimate		Target estimate	
DOE Site	Compliance [a]	Total	Compliance [a]	Total
Hanford				
Richland	$429.6	**$958.4**	$265.5	**$721.8**
River Protection	987.1	**1,149.7**	685.2	**838.0**
Idaho Falls	366.6	**643.1**	313.6	**540.6**
Savannah River	294.5	**1,411.1**	288.4	**1,268.5**
Oak Ridge	424.6	**741.7**	405.5	**668.3**

[a]The compliance amounts in this column show only the funding associated with meeting requirements contained in compliance agreements. It does not include (1) estimates of the funding needed to comply with requirements in federal, state, or local environmental laws and regulations that are not part of a compliance agreement or (2) the funding DOE estimates is necessary to maintain minimal site infrastructure, security, and safety requirements.

Source: GAO analysis of DOE data.

The multiple estimates of compliance costs developed by DOE sites indicate that DOE sites have alternative ways of achieving compliance in any given year. When we asked DOE officials to explain how the sites can have different estimates of the cost of meeting compliance requirements in the same year, they said that how much DOE plans to spend on compliance activities each year varies depending on the total amount of money available. Because many of the compliance milestones are due in the future, sites estimate how much compliance activity is needed each year to meet the future milestones. If sites anticipate that less money will be available, they must decide what compliance activities are critical for that year and defer work on some longer-term milestones to future years. On the other hand, if more money is available, sites have an opportunity to increase spending on compliance activities earlier than absolutely necessary.

DOE is concerned that deferring activities that support milestones in future years may cause future milestones to be missed or renegotiated. In general, the sites' target estimates and actual funding received have been below the sites' full requirements estimates. DOE officials in headquarters and the sites we visited are concerned that recurring years of funding below the "full requirements" level could result in a growth of future funding needs that eventually may cause DOE to fail to meet milestone dates and/or require it to renegotiate the milestones. As an alternative to

receiving more funding, DOE occasionally is able to identify operational efficiencies that accomplish the work for less money. DOE officials also acknowledged that DOE's current initiative to reassess its overall cleanup approach may result in identifying alternative cleanup approaches that could eliminate the need to perform some of the future cleanup work that has been deferred.

Compliance Agreements Are Site Specific and Do Not Allow for Managing Risks across DOE Sites

Compliance agreements are site-specific and are not intended as a way to manage environmental risks across DOE's many sites. The agreements generally reflect cleanup priorities established by local stakeholders and set out a sequence for accomplishing the work. Risk is one factor considered in sequencing the cleanup work at the sites, but other factors such as demonstrating cleanup progress and reducing the overall cost of maintaining facilities are also considered. DOE has not developed a comprehensive, relative ranking of the risks that it faces across its sites; as a result, it has no systematic way to make decisions among sites based on risk. DOE has tried to develop such a methodology in the past but has been unsuccessful in doing so. Instead, DOE has provided relatively stable funding to its sites each year and generally allowed local stakeholders to determine their priorities for sequencing work at the sites. This approach may change: the department's recently announced initiative to improve the performance of the environmental management program includes, as a key step, developing a risk-based cleanup strategy. DOE is currently evaluating how best to proceed in developing the risk-based strategy.

Compliance Agreements Do Not Provide a Basis for Setting Cleanup Priorities across DOE Sites

DOE's compliance agreements focus on environmental issues at specific sites. Because they are site-specific and do not include information on the risks being addressed, the agreements do not provide a means of prioritizing among sites and, therefore, do not provide a basis for decision-making across all DOE sites. For example, a compliance agreement at Savannah River focuses on achieving compliance with applicable CERCLA and RCRA requirements but does not specify the level of risks being addressed by specific cleanup activities.

In developing the compliance agreements, risk is only one of several factors considered in setting agreement milestones. Other factors include the preferences and concerns of local stakeholders, business and technical risk, the cost associated with maintaining old facilities, and the desire to achieve demonstrable progress on cleanup. The schedules for when and in what sequence to perform the cleanup work reflect local DOE and

stakeholder views on these and other factors. For example, Savannah River regulators told us that they were primarily concerned that DOE maintain a certain level of effort linked to the compliance agreement and they expected DOE to schedule this work to most efficiently clean up the site. DOE developed a decision model to determine how to allocate its cleanup dollars at Savannah River to achieve this efficiency. A group of outside reviewers assessing the system at the request of site management concluded that the model was so strongly weighted to efficiency that it was unlikely that serious risks to human health or the environment could alter the sequencing of work. DOE officials said they revised the model so that serious risks receive greater emphasis.

DOE's Past Attempts to Develop a Risk-based Approach to Cleanup Were Unsuccessful

In response to concerns expressed by the Congress and others about the effectiveness of the cleanup program, DOE has made several attempts to develop a national, risk-based approach to cleanup. As early as 1993, the Congress was urging DOE to develop a mechanism for establishing priorities among competing cleanup requirements. In 1995, we reported that unrealistic cleanup plans had impeded DOE's progress and that DOE needed to adopt a national risk-based cleanup strategy. DOE's efforts to do so occurred over several years. For example,

- In 1995, DOE developed risk data sheets as part of the budget development process. First used to develop the budget estimate for fiscal year 1998, the risk data sheets were used to assign scores based on such elements as public and worker health and environmental protection. The approach suffered from data limitations, poor definitions of the activities, inconsistent scoring of risk, and inadequate involvement with stakeholders. Finally, in 1997 DOE abandoned this effort.
- In 1997, DOE established risk classifications as part of its project baseline summaries.[10] The project baseline summaries contained a component that addressed each project's environmental risk. However, DOE did not have a clear basis for classifying risks, and the effort was not implemented consistently or generally accepted by DOE field staff. After 1998, this information was no longer developed.
- In 1999, DOE pilot tested the use of site risk profiles at 10 DOE offices. The profiles were intended to provide risk information about the sites, make effective use of existing data at the sites, and incorporate

[10] These summaries are used to estimate the funding needs and planned activities over the life of a project.

stakeholder input. However, reviewers found that the site profiles failed to adequately address environmental or worker risks because the risks were not consistently or adequately documented. In 2001, DOE eliminated a support group responsible for assisting the sites with this effort, and the risk profiles are generally no longer being developed or used.

A 1999 DOE-funded study to evaluate its efforts to establish greater use of risk-based decision making concluded that none of the attempts had been successful.[11] Common problems identified by the study included poor documentation of risks and inconsistent scoring of risks between sites. The study reported that factors contributing to the failure of these efforts included a lack of consistent vision about how to use risk to establish work priorities, the lack of confidence in the results by DOE personnel, the unacceptability of the approaches to stakeholders at the sites, and DOE's overall failure to integrate any of the approaches into the decision-making process. However, the study concluded that the use of risk as a criterion for cleanup decision-making across DOE's sites was not only essential, but was feasible and practical, given an appropriate level of commitment and effort by DOE.

Without a national, risk-based approach to cleanup in place, DOE's budget strategy has been to provide stable funding for individual sites and let the sites determine what they needed most to accomplish. For example, over the last 5 years, funding for Savannah River has ranged from $1.1 billion to $1.2 billion and Rocky Flats received from $621 million to $665 million.[12] DOE's Associate Deputy Assistant Secretary for Policy, Planning, and Budget told us that this approach allowed sites to allocate their funding based on their site-specific risk, compliance, and closure objectives.

[11] Consortium for Risk Evaluation with Stakeholder Participation, *Peer Review of the U.S. Department of Energy's Use of Risk in Its Prioritization Process,* (New Brunswick, NJ: Dec. 15, 1999).

[12] The two operations offices with substantial increases--Richland (from $951 million to $1.7 billion) and Oak Ridge (from $516 million to $726 million)--reflect particular issues that emerged in the last couple of years at those offices. At Hanford, funding has increased primarily to build the $4 billion plant to vitrify high-level tank wastes while at Oak Ridge funding was increased to deal with revelations about longstanding problems at the Paducah and Portsmouth Uranium Enrichment plants.

DOE's Current Initiative to Improve the Cleanup Program Has Identified Accelerated Risk Reduction as a Central Theme

DOE plans to shift its cleanup program to place greater focus on rapid reduction of environmental risk. In February 2002, DOE released a report describing numerous problems with the environmental management program and recommending a number of corrective actions.[13] The report concluded that, among other things, the cleanup program was not based on a comprehensive, coherent, technically supported risk prioritization; it was not focused on accelerating risk reduction; and it was not addressing the challenges of uncontrolled cost and schedule growth. The report recommended that DOE, in consultation with its regulators, move to a national strategy for cleanup. In addition, the report noted that the compliance agreements have failed to achieve the expected risk reduction and have sometimes not focused on the highest risk. The report recommended that DOE develop specific proposals and present them to the states and EPA with accelerated risk reduction as the goal.

DOE's new initiative provides additional funds for cleanup reform and is designed to serve as an incentive to sites and regulators to identify accelerated risk reduction and cleanup approaches. DOE's fiscal year 2003 budget request includes a request for $800 million for this purpose. Moreover, the Administration has agreed to support up to an additional $300 million if needed for cleanup reforms. The set-aside would come from a reduction in individual site funding levels and an increase in the overall funding level for the cleanup program. The money would be made available to sites that reach agreements with federal and state regulators on accelerated cleanup approaches. Sites that do not develop accelerated programs would not be eligible for the funds. As a result, sites that do not participate could receive less funding than in past years. One initial response has been at Hanford, where DOE and the regulators signed a letter of intent in March 2002 to accelerate cleanup at the site by 35 years or more. DOE and the regulators agreed to consider the greatest risks first as a principle in setting cleanup priorities. They also agreed to consider, as targets of opportunity for accelerated risk reduction, 42 potential areas identified in a recent study at the site. While accelerating the cleanup may hold promise, Hanford officials acknowledged that much technical, regulatory, and operational work is required to actually implement the proposals in the new approach.

[13] U.S. Department of Energy, *A Review of the Environmental Management Program*, (Washington, D.C.: Feb. 4, 2002).

DOE is proceeding with the selection and approval of accelerated programs at the sites, as well as identifying the funding for those accelerated programs. At the same time, DOE is considering how to best develop a risk-based cleanup strategy. DOE's Assistant Secretary for Environmental Management said that in developing the risk-based approach, DOE should use available technical information, existing reports, DOE's own knowledge, and common sense to make risk-based decisions. Because DOE's approach to risk assessment is under development, it is unclear how effective it will be or whether in implementing it, DOE will be able to overcome the barriers encountered during past efforts to formalize a risk-assessment process. In the interim, DOE headquarters review teams were evaluating the activities at each site and were qualitatively incorporating risk into those evaluations.

Compliance Agreements Were Not a Barrier to Past Management Improvements, but Impact on February 2002 Initiative Is Unclear

Compliance agreements have not been a barrier to previous DOE management improvements, but it is not clear if the agreements will be used to oppose proposed changes stemming from the February 2002 initiative. In the past, DOE has tried other management initiatives, within the framework of the compliance agreements. These initiatives generally have not involved significant changes in cleanup approach or the potential for significant reductions in funding at individual sites. We found no evidence that the compliance agreements were a barrier to implementing such initiatives or were a factor in their success or failure. Instead, the agreements have been used primarily to hold DOE accountable, through enforceable milestones, for cleaning up environmental hazards using whatever management strategy DOE employed to do so.

The outcome could be different if regulators at individual sites perceive DOE's latest initiative as an attempt to reduce the level of cleanup activity at the sites. Although DOE generally did not involve regulators in developing its February 2002 initiative to implement faster, risk-based cleanup of its sites, based on our discussions with regulators at several sites, it is unlikely that the compliance agreements would be a barrier to the initiative, as long as DOE's approach is consistent with environmental laws and results in no reduction in funding at individual sites. However, the discussions indicated that DOE could encounter opposition if its realignment of cleanup priorities results in a site's receiving significantly less funding and therefore accomplishing considerably less work than called for in the agreement. Parties to the compliance agreements indicated that if this occurs, they may not be willing to negotiate with DOE to extend schedule milestones further. In addition, it is unclear if regulators will use the compliance agreements to resist other aspects of

DOE's initiative, such as reclassifying waste to different risk categories in order to increase disposal options.

Compliance Agreements Have Not Been a Barrier to DOE's Past Management Initiatives

DOE has implemented or tried to implement a number of management initiatives in recent years to improve its performance and address uncontrolled cost and schedule growth. For example, in 1994 it launched its contract reform initiative, in 1995 it established its privatization initiative, and in 1998 it implemented its accelerated path-to-closure initiative. These initiatives affected how DOE approached the cleanup work, the relationship DOE had with its contractors, and in some cases the schedule for completing the work. Based on reviewing past evaluations of these initiatives and discussions with DOE officials, it appears that DOE proceeded with these initiatives without significant resistance or constraints as a result of the compliance agreements. For example:

- DOE's contract reform initiative involved a number of separate efforts, including greater use of fixed-price contracts and performance-based contracts, and a shift to greater use of management and integrating contracts that encourage using a greater number of specialized contractors and an integrating contractor to coordinate the various activities. DOE has implemented these reforms at many of its sites, including all of its large cleanup sites. Although the overall result of DOE's contract reform initiative is difficult to measure, the various contracting reforms occurred within the framework of the existing cleanup approaches reflected in the compliance agreements in effect at those sites.[14]
- DOE's privatization initiative was intended to reduce the cost of cleanup by attracting "best in class" contractors with fixed-price contracts that required contractors to design, finance, build, own, and operate treatment facilities and to receive payments only for successfully treating DOE's wastes. Although this approach required substantially different contracting and financing arrangements and there was considerable uncertainty about its eventual success, DOE implemented privatization projects at a number of its major sites, even though doing so sometimes required delaying or renegotiating near-term milestones in the compliance agreements. For example, to implement a privatization contract for the Hanford tank waste project, DOE renegotiated several milestones with its

[14] We currently have a review underway to assess the results of DOE's contract reform initiatives.

regulators. The state of Washington and EPA eventually agreed to the changes, even though they had concerns about DOE's approach. This privatization project failed a few years later, stemming primarily from significant cost growth, poor contractor performance, and inadequate DOE management.

- DOE's path-to-closure initiative was aimed at developing more efficient ways to conduct cleanup and, as a result, accelerate cleanup and closure of DOE sites. DOE's goal was to clean up 41 of its 53 remaining contaminated sites by 2006. It proceeded to establish new cleanup and closure goals at many of its sites within the framework of the existing compliance agreements. For example, the planned closure of the Rocky Flats site was changed from 2010 to 2006 through a revision of the project baseline and award of a new closure contract.[15] State of Colorado and EPA regulators supported those changes, even though they were not consistent with milestone dates in the site agreement.

Regulators at the DOE sites we visited acknowledged that compliance agreements have not been a barrier to DOE's management improvement initiatives. They said that although the agreements hold DOE accountable for its cleanup responsibilities, the agreements do not prescribe how DOE should manage its program. Several milestones in the compliance agreements have been renegotiated because DOE wanted to incorporate changes in its management approach with a resulting effect on specific projects. For example, DOE's spent nuclear fuel project at Hanford is an effort to stabilize about 2,100 metric tons of highly radioactive spent fuel stored in aging basins and move the stabilized fuel farther from the Columbia River. Regulators agreed to revised interim milestones for the work after DOE proposed changes that would save money and reduce the risk of radiation exposure to workers.

Effect of Compliance Agreements on Current Management Initiative Is Unclear

DOE's management reform initiative is in the early stages and site-specific strategies are only beginning to emerge. DOE has begun discussions with officials in several states to implement this accelerated initiative. However, because DOE's cleanup reform initiative is in its early stages, it is unclear how the site compliance agreements will affect implementation

[15] For a discussion of the Rocky Flats Closure Contract, see U.S. General Accounting Office, *Nuclear Cleanup: Progress Made at Rocky Flats, but Closure by 2006 Is Unlikely, and Costs May Increase*, GAO-01-284 (Washington, D.C.: Feb. 28, 2001).

of DOE's latest cleanup reforms. For example, it is not yet known how many sites will participate in DOE's initiative and how many other sites will encounter cleanup delays because of reduced funding.

Parties to the agreements at the sites we visited were supportive of DOE efforts to improve management of the cleanup program, but expressed some concerns about proposals stemming from the February 2002 review of the program. They said that DOE's efforts to accelerate cleanup and focus attention on the more serious environmental risks are welcomed and encouraged because such initiatives are consistent with the regulators' overall goals of reducing risks to human health and the environment. Most regulators added, however, that DOE generally had not consulted with them in developing its reform initiative and the regulators were concerned about being excluded from the process. They also said that DOE's initiative lacked specifics and that they had numerous questions about the criteria DOE will use to select sites and the process DOE will follow at those sites to develop an implementation plan to accelerate cleanup and modify cleanup approaches. Most regulators said they would not view as favorable any attempt by DOE to avoid appropriate waste treatment activities or significantly delay treatment by reducing funding available to sites. In such a case, these regulators are likely to oppose DOE's initiative. They told us that they most likely would not be willing to renegotiate milestones in the compliance agreements if doing so would lead to delays in the cleanup program at their sites. In addition, these regulators said that if DOE misses the milestones after reducing the funding at individual sites, they would enforce the milestones in the compliance agreements.

The effect of compliance agreements on other aspects of DOE's initiative, especially its proposal to reclassify waste into different risk categories to increase disposal options, is also unclear. Some of the proposed changes in waste treatment, such as eliminating the need to vitrify at least 75 percent of the high-level waste, which could result in disposing of more of the waste at DOE sites, would signal major changes in DOE assumptions about acceptable waste treatment and disposal options. For example, DOE is considering the possibility of reclassifying much of its high-level waste as low-level mixed waste or transuranic waste based on the risk attributable to its actual composition.[16] Most of the high-level waste is

[16] Currently, DOE classifies this high-level waste based on the treatment process that created the waste.

located at DOE's Hanford site. In addition, DOE officials at Hanford are considering relaxing the requirement to transport a portion of its transuranic waste to New Mexico, allowing instead for disposal on-site. While these options could reduce treatment and disposal costs and time frames, DOE would need to obtain regulatory and stakeholder agreement to alter key commitments. These types of changes in treatment approach would require modifications to current compliance agreements. It is unclear whether DOE's regulators will be supportive of these changes. At Hanford, the regulators have agreed to discuss these types of changes in cleanup strategy. However, at all four sites we visited, regulators said that, although they supported DOE efforts to improve its operations, they also wanted DOE to meet its compliance commitments. The regulators commented that it is unclear how DOE's proposed initiatives will be implemented, what technologies will be considered, and whether the changes will result in reduced cost and accelerated cleanup while adequately protecting human health and the environment.

DOE generally did not seek input from site regulators or other stakeholders when developing its latest initiative. DOE's review team leader said that at the time the review team visited individual sites, the team had not formulated its conclusions or recommendations and so did not seek regulator input. Furthermore, the team leader said that, during the review, internal discussions were being held within DOE about improving ineffective cleanup processes, such as contracting procedures. To include regulators on the review team during these discussions, according to the team leader, could have created the impression that the criticism of DOE processes was regulator driven rather than reflecting the views of DOE and contractor staff. According to the Associate Deputy Assistant Secretary for Planning and Budget, since the proposals coming from the review team were made public in February, DOE has held discussions with regulators at all sites and headquarters about implementing the proposals.

Conclusions

DOE carries out its cleanup program in a complex legal and regulatory environment. Compliance agreements are one mechanism used to organize these legal and regulatory requirements and set priorities for cleanup at specific sites. As such, the agreements are not a useful tool, nor were they intended to be, for managing DOE's cleanup program from a national, system-wide perspective.

It is unclear if compliance agreements will be a potential barrier to DOE's current national cleanup reform initiative. This initiative involves placing a

greater focus on rapidly reducing environmental risks and, as a result, restructuring how DOE allocates its funding for cleanup across its sites. In some cases DOE is also considering dramatically different cleanup approaches than regulators and other stakeholders have come to expect. DOE's compliance agreements could be a potential barrier to these changes, particularly at those sites where funding may be reduced as a result of implementing the new initiatives or where a significantly different approach is being proposed.

DOE faces two main challenges in going forward with its initiative. The first is following through on its plan to develop and implement a risk-based method to prioritize its various cleanup activities. Given past failed attempts to implement a risk-based approach to cleanup, management leadership and resolve will be needed to overcome the barriers encountered in past attempts. The second challenge for DOE is following through on its plan to involve regulators in site implementation plans. DOE generally did not involve states and regulatory agencies in the development of its management improvement initiative. Regulators have expressed concerns about the lack of specifics in the initiative, how implementation plans will be developed at individual sites, and about proposals that may delay or significantly alter cleanup strategies. Addressing both of these challenges will be important to better ensure that DOE's latest management improvement initiative will achieve the desired results of accelerating risk reduction and reducing cleanup costs.

Agency Comments

We provided a copy of our draft report to the Department of Energy for review and comment. DOE's Assistant Secretary for Environmental Management responded that our draft report accurately presented information on the current status of compliance agreements, and generally agreed with the findings of the report. In addition, DOE provided technical clarifications and corrections to our report, which we incorporated as appropriate.

We performed our review from July 2001 through May 2002 in accordance with generally accepted government auditing standards.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. At that time, we will send copies to the Secretary of Energy. We will also make copies available to others on request. In addition, the report will be available at no charge on the GAO Web site at

http://www.gao.gov. If you or your staff have any questions or need additional information, please call me at (202) 512-3841. Other staff contributing to this report are listed in appendix IV.

Sincerely yours,

(Ms.) Gary L. Jones
Director, Natural Resources and Environment

Appendix I: Compliance Orders and Agreements Affecting DOE's Environmental Management Cleanup Program

This appendix presents information provided by DOE and from a questionnaire we administered to each of the operations offices that have sites with compliance agreements. The agreements are categorized into three types: "1" indicates agreements specifically required by section 120(e) (2) of CERCLA or by RCRA (as amended by section 105 of the Federal Facility Compliance Act of 1992), "2" indicates court-ordered agreements resulting from lawsuits, "3" indicates all other agreements. We defined a "compliance agreement" as a legally enforceable agreement between DOE and another party or parties that contained enforceable milestones defining cleanup activities that DOE must achieve by specified or ascertainable dates and that are funded by DOE's EM program.

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
Albuquerque Operations Office							
Los Alamos National Laboratory, New Mexico $2,188	Los Alamos National Laboratory Federal Facility Compliance Order; 10/4/1995	1	Store, treat, and dispose of covered mixed wastes at the laboratory (incorporates Site Treatment Plan)	DOE; New Mexico Environment Department; University of California	129	72	70
	Consent Agreement; 12/10/1993[d]	3	Implement remedial action plan and compliance schedule for storage of mixed waste	DOE; University of California; New Mexico Environment Department	3	3	3
Chicago Operations Office							
Brookhaven National Laboratory, New York $361	Brookhaven National Laboratory Federal Facility Agreement; 2/28/1992	1	Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the site; integrate CERCLA response actions with RCRA corrective action	DOE; U.S. EPA; New York State Department of Environmental Conservation	63	47	23

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
Idaho Operations Office							
Idaho National Engineering and Environmental Laboratory, Idaho $27,881	Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory; 12/9/1991	1	Establish procedural framework and schedule for implementing cleanup actions in accordance with CERCLA, RCRA, and the Idaho Hazardous Waste Act; integrate CERCLA response actions with RCRA corrective action	DOE; U.S. EPA; state of Idaho	154	123	109
	Idaho National Engineering Laboratory Consent Order; 11/1/1995	1	Resolve mixed waste storage violations, and commit to implement the Site Treatment Plan, which is incorporated by reference	DOE; Idaho Department of Health and Welfare	100	63	55
	Settlement agreement in Public Services Company of Colorado v. Batt and United States v. Batt; 10/16/1995	2	Treat spent fuel, high-level waste, and transuranic wastes in Idaho so as to allow disposal outside the state	DOE; U.S. Department of the Navy; state of Idaho	33	22	22

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	Idaho National Engineering and Environmental Laboratory Consent Order; 4/23/1999	3	Resolve alleged violations of federal and state hazardous waste requirements, including generation, treatment, storage, and disposal of these wastes	DOE; Idaho Department of Health and Welfare	31	31	31
	Idaho National Engineering Laboratory Consent Order; 4/3/1992	3	Resolve alleged violations, including storage of mixed waste	DOE; U.S. EPA; Idaho Department of Health and Welfare	64	62	62
	Idaho National Engineering and Environmental Laboratory Consent Order; 1/25/2001[d]	3	Resolve alleged violations of federal and state hazardous waste management requirements	DOE; U.S. EPA; Idaho Department of Health and Welfare	14	14	14
	Consent Order; 6/14/2000	3	Resolve potential violations of state hazardous waste management laws	DOE; Idaho Department of Health and Welfare	32	19	19
Pinellas, Florida $266	Remediation Agreement for the Four and One-Half Acre Site in Largo, Pinellas County, Florida; 3/12/2001	3	Remediate contaminated groundwater	DOE; Florida Department of Environmental Protection	3	2	2
Maxey Flats, Kentucky $14	Consent Decree in United States v. U.S. Ecology; 4/18/1996	2	Fund, design, and implement cleanup actions at the Maxey Flats Superfund site	DOE; U.S. Department of Justice; U.S. EPA; Commonwealth of Kentucky	7	5	5

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
Monticello, Utah $128	Monticello Site: Monticello Vicinity Properties National Priorities List Site and Monticello Millsite Federal Facility Agreement Pursuant to CERCLA Section 120; 12/22/1988	1	Ensure environmental impacts associated with past and present activities will have appropriate response actions taken and completed as necessary to protect the public health and the environment; integrate CERCLA response actions with RCRA corrective action	DOE; U.S. EPA; Utah Department of Health	61	50	46
Nevada Operations Office							
Nevada Test Site, Nevada $3,318	Nevada Test Site Federal Facility Compliance Act Consent Order; 3/27/1996	1	Treat mixed waste stored at the site—adopts by reference the Site Treatment Plan	DOE; Nevada Division of Environmental Protection	69	68	55
	Nevada Test Site Federal Facility Agreement and Consent Order; 5/10/1996	3	Identify sites of potential historic contamination and implement proposed corrective actions based on public health and environmental considerations	DOE; U.S. Department of Defense; state of Nevada	464	178	176

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	Mutual Consent Agreement between the State of Nevada and the Department of Energy for the Storage of Low-Level Land Disposal Restricted Mixed Waste; 1/14/1994	3	Store and manage mixed low-level waste generated by site characterization and cleanup actions at the Nevada Test Site	DOE; Nevada Division of Environmental Protection	12	12	10
	Settlement Agreement for Transuranic Mixed Waste Storage at the Nevada Test Site; 6/23/1992	3	Store mixed transuranic waste at Area 5 Radioactive Waste Management Site	DOE; Nevada Division of Environmental Protection	11	11	11
Ohio Operations Office							
Fernald, Ohio $3,341	Fernald Environmental Management Project Consent Agreement as amended under CERCLA sections 120 and 106(a); 9/20/1991	1	Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the site; integrate CERCLA response actions with RCRA corrective action	DOE; U.S. EPA	290	75	63
	Fernald Environmental Management Project Director's Final Findings and Orders; 10/4/1995	1	Establish Site Treatment Plan covering storage and treatment of mixed wastes and management of remediation wastes	DOE; Ohio Environmental Protection Agency	73	60	58

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	1988 Resource Conservation and Recovery Act/Clean Water Act Consent Decree; 12/2/1988 amended 1/22/93	2	Implement compliance with hazardous waste requirements and control wastewater and runoff	DOE; U.S. Department of Justice; state of Ohio	40	39	35
	Director's Final Findings and Orders; 9/7/2000	3	Monitor groundwater	DOE; Fernald Environmental Management Project	135	24	24
	Federal Facility Compliance Agreement; 7/18/1986	3	Establish initial remedial measures and remedial investigations and bring facility into compliance with Clean Air Act and RCRA	DOE; U.S. EPA	258	222	222
	Director's Final Findings and Orders; 9/10/1993[d]	3	Monitor groundwater	DOE; Fernald Environmental Restoration Management Corporation; Ohio Environmental Protection Agency	36	36	2
	Director's Final Findings and Orders; 12/27/1994[d]	3	Neutralize and remove hazardous waste	DOE; Ohio Environmental Protection Agency	4	4	3
	Director's Final Findings and Orders; 6/4/1996	3	Integrate the Ohio Environmental Protection Agency RCRA hazardous waste closure requirements into the remediation requirements of CERCLA	DOE; Fernald Environmental Restoration Management Corporation; Ohio Environmental Protection Agency	57	29	29

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	Director's Findings and Orders; 6/26/1987	3	Manage storm water and wastewater	DOE; Ohio Environmental Protection Agency	2	2	2
	Federal Facility Agreement for Control & Abatement of Radon-222 Emissions; 11/14/1991	3	Control and abate Radon-222 emissions	DOE; U.S. EPA	180	120	120
Mound, Ohio $1,413	Director's Final Findings and Orders; 10/4/1995	1	Store and treat mixed waste; approve Site Treatment Plan	DOE; Ohio Environmental Protection Agency	79	71	71
	U.S. Environmental Protection Agency Region V and the State of Ohio Federal Facility Agreement; 7/15/1993	1	Ensure environmental impacts associated with past and present activities will have appropriate response actions taken and completed as necessary to protect the public health and the environment; integrate CERCLA response actions with RCRA corrective action	DOE; Ohio Environmental Protection Agency; U.S. EPA	92	38	37

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
West Valley, New York $2,361	West Valley Demonstration Project Federal Facility Compliance Act Administrative Consent Order; 8/27/1996	1	Establish commitments for compliance with Site Treatment Plan for mixed waste storage and generation; develop framework to treat mixed wastes to meet land disposal restriction requirements; and store current and projected mixed wastes	DOE; New York State Department of Environmental Conservation	85	80	80
	Administrative Order on Consent Docket No. II RCRA-3008(h)-I 92-0202; 3/5/1992	3	Protect human health and the environment from hazardous waste releases	DOE; U.S. EPA; New York State Energy Research and Development Authority; New York State Department of Environmental Conservation	12	12	12
	Stipulation Agreement—Remedial Action Plan R9-4756-99-03, Biovent Stipulation Agreement; 3/19/1999	3	Clean up and remove underground storage tank petroleum releases	DOE; New York State Department of Environmental Conservation	4	3	3

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
Oakland Operations Office							
Energy Technology and Engineering Center, California $197	Energy Technology and Engineering Center Federal Facility Compliance Act Order Hazardous Waste Control Act #95/96-019; 10/6/1995	1	Store and treat mixed wastes at the center; incorporates Site Treatment Plan by reference	DOE; California Environmental Protection Agency	48	38	35
General Atomics, California $15	General Atomics Compliance Act Order Hazardous Waste Control Act #95/96-017; 10/6/1995[d]	1	Store and treat mixed wastes at General Atomics; incorporates Site Treatment Plan by reference	DOE; California Environmental Protection Agency	73	61	59
Lawrence Berkeley National Laboratory, California $82	Lawrence Berkeley National Laboratory Compliance Act Order Hazardous Waste Control Act #95/96-016; 10/6/1995[e]	1	Store and treat mixed waste at the laboratory	DOE; California Environmental Protection Agency	235	96	82
Laboratory for Energy-Related Health Research, California $41	Federal Facility Agreement for the Laboratory for Energy-Related Health Research; 12/8/1999	1	Establish a schedule for implementing cleanup actions in accordance with CERCLA, RCRA, and state law; integrate CERCLA response actions with RCRA corrective action	DOE; California Environmental Protection Agency; Central Valley Regional Water Quality Control Board; California Department of Health Services	21	14	14

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
Lawrence Livermore National Laboratory (Main Site), California $652	Federal Facility Compliance Act Order for Lawrence Livermore National Laboratory (Main Site) Hazardous Waste Control Act #96/97-5002; 2/24/1997	1	Store and treat mixed waste at the laboratory; carry out Site Treatment Plan	DOE; California Environmental Protection Agency	271	63	55
	Lawrence Livermore National Laboratory (Main Site) Federal Facility Agreement Under CERCLA Section 120; 11/1/1988	1	Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the site; integrate CERCLA response actions with RCRA corrective action	DOE; U.S. EPA; California Department of Health Services	343	202	174
Lawrence Livermore National Laboratory Site 300 (life-cycle cost included in Main Site)	Lawrence Livermore National Laboratory Site 300 Federal Facility Agreement, Administrative Docket No. 92-16; 6/29/1992	1	Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the site; integrate CERCLA response actions with RCRA corrective action	DOE; U.S. EPA; California Department of Toxic Substances Control; Central Valley Regional Water Quality Control Board	196	115	92

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
Oak Ridge Operations Office							
Oak Ridge Reservation, Tennessee $8,456	Oak Ridge Reservation Compliance Order, Case No. 95-0514; 9/26/1995	1	Implement the Site Treatment Plan (incorporated by reference) and set schedules for treating and storing mixed waste	DOE; Tennessee Department of Environment and Conservation	94	81	78
	Federal Facility Agreement for the Oak Ridge Reservation, DOE/OR-1014; 11/18/1991 (effective date 1/1/1992)	1	Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the site; integrate CERCLA response actions with RCRA corrective action	DOE; U.S. EPA; Tennessee Department of Environment and Conservation	752	432	282
Paducah, Kentucky $1,523	In the Matter of the U.S. Department of Energy's Paducah Gaseous Diffusion Plant Federal Facility Agreement; 2/1/1998	1	Implement CERCLA response actions and RCRA corrective action	DOE; U.S. EPA; Kentucky Natural Resources and Environmental Protection Cabinet	113	69	54
	U.S. DOE v. Natural Resources Environmental Protection Cabinet, Agreed Order, No. DWM-30039-042; 9/10/1997	1	Require compliance with the approved Site Treatment Plan	DOE; Kentucky Natural Resources and Environmental Protection Cabinet; Kentucky Department for Environmental Protection	156	50	50

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	Toxic Substances Control Act Uranium Enrichment Federal Facilities Compliance Agreement; 2/20/1992	3	Establish a plan to bring uranium enrichment plants into compliance with Toxic Substances Control Act and polychlorinated biphenyl regulations	DOE; U.S. EPA	28	15	15
Portsmouth, Ohio $3,012	Portsmouth Gaseous Diffusion Plant Director's Final Findings and Orders; 10/4/1995	1	Approve Site Treatment Plan for treatment of mixed hazardous waste	DOE; Ohio Environmental Protection Agency	62	37	16
	State of Ohio v. DOE, Civil Action No. C2 89-732; 9/1/1989	2	Clean up and manage hazardous and mixed waste, polychlorinated biphenyls, and water pollutants at Portsmouth	DOE; State of Ohio; U.S. Department of Justice	8	8	6
	Administrative Consent Order, In the Matter of U.S. DOE: Portsmouth Gaseous Diffusion Plant, No. OH7-890-008-983; 8/12/1997	3	Establish oversight roles for U.S. EPA and Ohio Environmental Protection Agency for cleanup under the 9/1/1989 consent decree No. C2-89-732	DOE; U.S. EPA; Ohio Environmental Protection Agency	212	191	49
	Toxic Substances Control Act Uranium Enrichment Federal Facilities Compliance Agreement; 2/20/1992	3	Bring DOE's former and active uranium enrichment plants into compliance with Toxic Substances Control Act and polychlorinated biphenyl regulations	DOE; U.S. EPA	6	2	2

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
Weldon Spring, Missouri $428	Weldon Spring Site Federal Facility Agreement under CERCLA section 104, Docket No. CERCLA-VII-85-F-0057; 8/22/1986	3	Perform CERCLA removal and remedial actions	DOE; U.S. EPA	58	44	36
Rocky Flats Field Office							
Rocky Flats Environmental Technology Site, Colorado $7,705	Final Rocky Flats Cleanup Agreement; 7/19/1996	1	Establish the framework for cleaning up Rocky Flats Environmental Technology Site; coordinate DOE's cleanup obligations under various statutes	DOE; U.S. EPA; Colorado Department of Public Health and Environment	62	38	37
	Compliance Order on Consent No. 99-09-24-01; 10/27/1999 amended 4/10/2001	1	Replace previous consent orders for mixed residues; establish requirements for mixed residues management	DOE; Kaiser-Hill Co., LLC; Colorado Department of Public Health and Environment[f]	5	4	3
	Order Requiring Compliance with Site Treatment Plan Compliance Order No. 95-10-03-01; 10/3/1995	1	Approve and require compliance with the Site Treatment Plan for mixed waste	DOE; Colorado Department of Public Health and Environment	38	8	8

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	Compliance Order on Consent No. 97-08-21-01; 09/11/97	3	Establish compliance requirements and schedules for implementation of management of hazardous wastes and hazardous waste portion of mixed waste located in equipment, tanks, or ancillary tank equipment at the facility	DOE; Kaiser-Hill Company, LLC; Colorado Department of Public Health and Environment	10	8	7
	Compliance Order on Consent No. 97-08-21-02; 9/4/1997	3	Establish compliance requirements and schedules for implementation of waste management plans and resolve violations of regulations	DOE; Kaiser-Hill Company, LLC; Colorado Department of Public Health and Environment	4	4	4
Richland Operations Office/Office of River Protection							
Hanford, Washington $62,097	Hanford Federal Facility Agreement and Consent Order, (Tri-Party Agreement); 5/15/1989 amended 12/1998	1	Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the site; integrate CERCLA response actions with RCRA corrective action	DOE; U.S. EPA; Washington Department of Ecology	951	725	649

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	Consent Decree, CT-99-5076-EFS; 9/30/1999 amended 9/19/2000	2	Resolve issues concerning missed milestones in federal facility agreement of 5/15/1989; establish a schedule for pumping liquid radioactive waste from single shell tanks into double shell tanks for storage and treatment. Amendment set deadline for DOE to award a contract for design and construction of a waste treatment facility	DOE; Washington Department of Ecology; Attorney General of Washington; U.S. Department of Justice	38	21	21
	Federal Facility Compliance Agreement for Radionuclide National Emission Standards for Hazardous Air Pollutants; 2/7/1994	3	Perform activities needed to bring Hanford site into compliance with the Clean Air Act and its implementing regulations	DOE; U.S. EPA	91	79	73
Savannah River Operations Office							
Savannah River Site, South Carolina $37,809	Consent Order 95-22-HW; 9/29/1995	1	Implement the Site Treatment Plan; update plan annually; notify the South Carolina Department of Health and Environmental Control of new mixed waste streams	DOE; South Carolina Department of Health and Environmental Control	74	26	26

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	SRS Federal Facility Agreement under Section 120 of CERCLA; 1/15/1993	1	Establish requirements for remedial action under CERCLA and integrate CERCLA response with corrective action measures required by RCRA permit	DOE; U.S. EPA; South Carolina Department of Health and Environmental Control	562	455	163
	Consent Decree Civil Action No. 1:85-2583-6; 5/26/1988	2	Obtain permit, submit closure plan, conduct groundwater monitoring, close, and provide post closure care for certain facilitates at the Savannah River Plant	DOE; South Carolina Department of Health and Environmental Control; U.S. Department of Justice; Natural Resources Defense Council; Energy Research Foundation; Assistant U.S. Attorney of the District of South Carolina; South Carolina League of Women Voters; Georgia Conservancy	20	20	20
	Consent Order 99-155-W; 10/11/1999	3	Modify compliance schedule for Clean Water Act National Pollution Discharge Elimination System permit to provide additional time for construction and modification of treatment facilities	DOE; South Carolina Department of Health and Environmental Control; Westinghouse Savannah River Company	3	2	2

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	Consent Order 99-21-HW; 7/13/1999	3	Establish remediation schedules to meet objectives of corrective action plans to remediate groundwater contamination as required by South Carolina permit	DOE; South Carolina Department of Health and Environmental Control	5	5	5
	Consent Order 99-41-HW; 9/28/1999	3	Close incinerator tank; identify and manage previously unidentified waste	DOE; South Carolina Department of Health and Environmental Control; Westinghouse Savannah River Company	6	6	6
	Settlement Agreement 87-27-SW; 5/1/1987 amended 6/15/1989	3	Submit revised part B permit applications	DOE; South Carolina Department of Health and Environmental Control	5	5	5
	Settlement Agreement 87-52-SW; 11/10/1987 amended 5/9/1991 and 10/5/1995	3	Submit revised part B permit application for mixed waste management facility; amendments required submission of further revised part B applications to address low-level radioactive waste disposal facility and groundwater contamination	DOE; South Carolina Department of Health and Environmental Control	6	6	6

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	Settlement Agreement 91-51-SW; 8/26/1991	3	Refrain from further disposal of solvent rags in low-level radioactive waste disposal facility and sanitary landfill; apply for permit and submit closure plans for the facilities	DOE; South Carolina Department of Health and Environmental Control	10	10	10
	Administrative Consent Order 85-70-SW; 11/7/1985	3	Establish course of action to achieve compliance with South Carolina hazardous waste management regulations, including installing monitoring wells and continuing groundwater assessments	DOE; South Carolina Department of Health and Environmental Control	7	7	7
	Consent Order 01-193-W, 01-063-A; 8/24/2001	3	For industrial solid waste landfill, comply with water and air permit requirements; submit corrective action plan to address remediation of petroleum hydrocarbons; submit a monitoring program	DOE; Westinghouse Savannah River Company; South Carolina Department of Health and Environmental Control	5	4	4
	Consent Agreement 97-05-SW; 3/24/1997	3	For industrial solid waste landfill, submit characterization report and permit application	DOE; South Carolina Department of Health and Environmental Control	5	5	5

In millions of constant 2001 dollars

Site and current life-cycle cleanup cost	Agreement name and date signed[a]	Agreement category[b]	Activities covered by the agreement	Parties to the agreement	Number of enforceable milestones[c]	Number of milestones completed	Number of milestones completed on original date
	Consent Agreement 97-27-SW; 5/21/1997	3	For industrial solid waste landfill, submit characterization report and permit application	DOE; Westinghouse Savannah River Company; South Carolina Department of Health and Environmental Control	6	5	5
Total					**7,186**	**4,558**	**3,639**

[a]If an agreement was signed on multiple dates by the various parties, the latest date was used in this appendix.

[b]The agreements are divided into three types: 1 = agreements specifically required by section 120(e)(2) of CERCLA or by RCRA (as amended by section 105 of the Federal Facility Compliance Act of 1992); 2 = court-ordered agreements resulting from lawsuits; 3 = all other agreements.

[c]The number of enforceable milestones may change over the life of an agreement, as milestones are deleted or added to address new work scope.

[d]This agreement has been completed.

[e]Site was transferred to DOE's Office of Science and receives no further environmental management funding.

[f]Originally the parties to this agreement were DOE; Kaiser-Hill Co., LLC; Safe Sites of Colorado, LLC; Rocky Mountain Remediation Services, LLC; Colorado Department of Public Health and Environment. The amendment removed subcontractors Rocky Mountain Remediation Services and Safe Sites of Colorado from the compliance order after the new closure contract with Kaiser-Hill was established.

Source: GAO analysis of DOE data.

Appendix II: Comments from the Department of Energy

Department of Energy
Washington, DC 20585

May 16, 2002

Mr. William Swick
Assistant Director
United States General Accounting Office
Washington, DC 20548

Dear Mr. Swick:

We have reviewed your report entitled *Waste Cleanup: Status and Implications of DOE's Compliance Agreements,* (GAO-02-567). The report with some minor corrections, accurately presents the current status of our compliance agreements. Enclosed are our detailed comments on the report.

We would like to express our appreciation for the extensive research and analysis that GAO did in preparing this report. The depth of the report represents the product of an enormous amount of work by many dedicated people at GAO. Your extensive interactions with Environmental Management staff were well received and the report reflects that coordination.

Environmental Management has developed an aggressive plan of action to change how the Department approaches its cleanup mandate, and this report will be another factor utilized to support our new approach.

If you have any questions, please contact Mr. Eugene Schmitt, Acting Deputy Assistant Secretary, for Policy, Planning and Budget, at (202) 586-8754.

Sincerely,

Jessie Hill Roberson
Assistant Secretary for
Environmental Management

Enclosure

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Appendix III: Scope and Methodology

To determine the types of compliance agreements and what progress DOE is making in meeting milestone commitments, we administered a questionnaire to all DOE sites with compliance agreements funded by DOE's Environmental Management program. We defined a "compliance agreement" as a legally enforceable agreement between DOE and another party or parties that contained enforceable milestones defining cleanup activities that DOE must achieve by specified or ascertainable dates and that are funded by DOE's EM program. To determine the universe of compliance agreements, we obtained a list of all EM-funded compliance agreements from DOE. We also compared this list to EM sites listed on the EPA's National Priorities List, which are required to have compliance agreements implementing CERCLA requirements. We discussed these agreements with staff from the DOE Chief Counsel's office and the EM program to validate both the number of sites with agreements and the number of agreements. We removed from our study any agreement that did not contain enforceable milestones that DOE was required to meet. In addition, we did not include RCRA permits in our universe because (1) the great majority of DOE's cleanup work is covered under compliance agreements and very little of that work is required under RCRA permits and (2) cleanup activities required as a condition of RCRA permits are generally also included in compliance agreements at DOE sites.

Some of the compliance agreements we identified had been subsequently amended or replaced by other agreements. We included in the universe milestones from the original agreements if they were unique to those agreements and not repeated in the subsequent agreements. In addition, five of the agreements are no longer active because all the milestones associated with the agreements had been completed. We included those agreements and their milestones in our study. For each DOE site having one or more compliance agreement, we requested, for each agreement, information on the type of agreement, the scope of cleanup activities covered by the agreement, and information on the schedule milestones in the agreement. We also asked officials at each site to verify that the list of compliance agreements for their site was complete. We did not independently verify the accuracy of the information provided by each DOE site, but at the four sites we visited, we selectively tested the reasonableness of the information by reviewing site records and discussing compliance agreements with DOE officials. At some sites, DOE officials were unable to provide exact numbers, especially concerning the number of milestone dates that had been changed and the number of milestones that would be completed in the future. In these cases, DOE officials said the information provided represented their best estimates.

To determine the extent that compliance with DOE agreements is reflected in the DOE budget submitted to the Congress, we reviewed numerous budget formulation documents at DOE sites and at DOE headquarters, budgeting guidance and standards, and we analyzed information from DOE's integrated planning and budgeting system. We visited four of DOE's largest environmental management program offices—the Richland, Idaho, Oak Ridge, and Savannah River operations offices—to document how these offices include compliance agreement requirements in their budget submittals to DOE headquarters. Although sites develop estimates of the compliance costs associated with compliance agreements as well as federal, state, or local environmental laws and regulations, in this report, compliance costs are limited to those costs associated with DOE's compliance agreements. To determine how DOE headquarters uses site budget submittals, including compliance requirements, in its final budget submittal to the Congress, we reviewed budget documentation and interviewed officials at DOE's headquarters office of the environmental management program and the Office of Management and Budget.

To identify whether compliance agreements could be used to prioritize cleanup work across DOE sites, we reviewed the compliance agreements, interviewed DOE headquarters and site staff involved in the EM program to determine how environmental risks are considered in carrying out the cleanup program, and discussed the agreements with federal and state regulators at the four sites we visited. We also reviewed various studies and reports prepared by DOE and other organizations that discussed risk-based decision-making in the EM program.

To assess the implications of compliance agreements on DOE's initiatives to improve its EM program, we discussed the initiatives with DOE managers and staff in headquarters, including the leader of DOE's February 2002 report, *A Review of the Environmental Management Program*. We also reviewed the proposal coming out of that report and discussed it with staff at the four field offices we visited as well as the regulators we interviewed about those sites. In addition, we reviewed other related documents and reports as well as reports issued by us and others on past EM management reform initiatives attempted or implemented by DOE.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Bill Swick (206) 287-4800

Staff Acknowledgments

In addition to the person named above Chris Abraham, Doreen Feldman, Rachel Hesselink, Rich Johnson, Nancy Kintner-Meyer, Tom Perry, Ilene Pollack, Laura Shumway, and Stan Stenersen made key contributions to this report.

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