G A O
Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

May 14, 2003

The Honorable David L. Hobson
Chairman
The Honorable Peter J. Visclosky
Ranking Minority Member
Subcommittee on Energy and Water Development
Committee on Appropriations
House of Representatives

Subject: *Department of Energy: External Regulation Savings in Safety and Health Activities at DOE Science Laboratories*

The Department of Energy (DOE) is unusual among federal agencies in that it regulates and inspects its own facilities to protect the safety and health of its workers and of the communities surrounding its vast complex of research laboratories. With few exceptions, all other federal facilities must comply with national standards set by the Nuclear Regulatory Commission (NRC) for nuclear safety and by the Occupational Safety and Health Administration (OSHA) for worker safety and health.

DOE asserts that, for the most part, its safety and health standards meet or exceed those promulgated for facilities regulated by NRC and OSHA. At DOE's 10 science laboratories, which are run by management and operating (M&O) contractors, the department and its contractors use a contract administration process to select standards appropriate to current worker hazards and public safety issues.[1]

Both DOE and the M&O contractors are involved in safety and health activities.[2] DOE's field offices, most of which are located at the laboratories, provide continuous safety and health oversight of the M&O contractors. DOE headquarters offices provide policy guidance to the field offices and also conduct some oversight of the laboratories. Safety and

[1] These science laboratories are also known as nonmilitary energy laboratories or non-defense science laboratories.

[2] DOE and contractor safety and health personnel are involved in emergency preparedness, fire protection, industrial hygiene, industrial safety, occupational medical services, nuclear safety, radiation safety, transportation safety, and management of oversight and reporting on these safety and health activities.

health personnel working for the M&O contractors take actions to comply with the safety and health standards and conduct their own self-assessment activities. DOE's field offices track contract compliance through direct observations and through the review of safety and health reports and other related information provided by the M&O contractors.

Over a decade ago, DOE began considering whether to end self-regulation of its facilities to improve safety and public trust in the department, among other reasons. However, after much study, the department concluded that the costs of shifting to external regulation would exceed the potential benefits of doing so. We have taken a position different from DOE. For example, in a 2002 report, we observed that external regulatory agencies' "greater independence, coupled with use of national nuclear and worker safety standards and enforcement powers, would make them more cost-effective regulators [than DOE]."[3] In addition, any resource savings to the department in shifting to external regulation could potentially be redirected to other mission priorities.

The conference report accompanying the Energy and Water Development Appropriations Act for fiscal year 2002 directed DOE to prepare an implementation plan for shifting the department's science laboratories to external regulation.[4] In July 2002, DOE presented a plan that was 1 month late and lacked important information. A subsequent committee report accompanying the 2003 appropriations bill criticized DOE for providing the "grossly inadequate" plan.[5] This report concluded that DOE "cannot be relied upon to provide accurate and objective information in response to Committee requests for information on this issue." You therefore requested us to determine (1) how much DOE spends on safety and health activities at its science laboratories and (2) how much DOE might save after shifting to external regulation of these facilities. To address these objectives, we substantially relied on data collection instruments that we sent to DOE and M&O contractor officials associated with the 10 science laboratories. We briefed your offices on the results of our review on March 28, 2003, using the enclosed slides. This is report summarizes the results of that briefing.

[3] U.S. General Accounting Office, *Department of Energy: Observations on Using External Agencies to Regulate Nuclear and Worker Safety in DOE's Science Laboratories*, GAO-02-868R (Washington, D.C.: June 26, 2002).

[4] H.R. Rep. No. 107-258, October 30, 2001, at 109-110.

[5] H.R. Rep. No. 107-681, September 24, 2002, at 133-134.

Summary

In FY 2002, DOE spent about $145 million on safety and health activities at its 10 science laboratories, and we believe that this spending level has not varied much during the last 4 years. This expenditure represented about 16 percent of all safety and health costs department wide. Virtually the entire expenditure went to cover the more than 1,400 federal and M&O contractor personnel involved in safety and health activities—about 95 percent of whom worked for the M&O contractors. The reported safety and health costs do not include any maintenance costs, which are accounted for separately.

A shift to external regulation of the science laboratories could decrease DOE's annual safety and health costs by up to about $41 million, or increase these costs up to about $5 million depending on the level of continued department oversight of these activities. Any potential savings in DOE safety and health costs, however, would likely be applied to reduce other costs associated with external regulation and would, therefore, not produce immediate overall budgetary savings. Costs would be incurred to bring the laboratories into compliance with national safety and health standards and to supplement the staffs of the external agencies to take on regulatory and inspection responsibilities for the numerous facilities at each science laboratory. In addition, both DOE and the M&O contractors might transfer safety and health personnel to other functional areas in their respective organizations rather than eliminate these positions to reduce overall operating costs. Further reductions in safety and health costs might be possible through staff reductions at DOE headquarters offices. However, these offices contend that personnel reductions are unlikely because staff will still be needed to self-regulate other facilities, such as the defense laboratories, and to interact with the external regulators.

Any reduction in DOE safety and health costs after shifting to external regulation would stem from DOE altering its approach to overseeing safety and health activities. If DOE continues with its current oversight approach after regulatory authority shifts to NRC and OSHA, safety and health costs could actually increase up to about $5 million annually. These additional costs would result from DOE increasing its current safety and health staffing levels to interact with the external regulatory agencies, and the M&O contractors increasing their safety and health staffing levels to respond to reporting requirements and information requests from both the external regulators and DOE. We found that the DOE safety and health oversight approach, which drives staffing levels, is substantially reflected in the number of contractually required safety and health reports and frequent ad hoc information requests of the M&O contractors. Eliminating

redundant information requests and oversight after shifting to external regulation could justify a reduction in or redirection of safety and health personnel that would lower safety and health costs.

Background

External regulation of the science laboratories would provide a number of benefits. In a 2001 report, we found that eliminating DOE self-regulation of safety and health activities and taking other actions would improve the accountability of the department.[6] For a 2002 report, our examination of federal and foreign laboratories comparable to DOE's science laboratories suggested that "external regulators can potentially oversee [the laboratories] more efficiently and at less cost than DOE's internal staff."[7] In a subsequent testimony, we concluded "the issue is not should DOE shift to external regulation of its science laboratories, but how."[8]

Shifting to external regulation of the science laboratories will entail federal government costs to bring the laboratories into compliance with national standards and annual cost increases for the regulatory agencies. Any potential reduction in safety and health costs within DOE and its M&O contractors is expected to help offset these other costs. To ascertain the greatest of these anticipated costs, the conference report on continuing appropriations for FY 2003 directed NRC and OSHA to conduct compliance audits of the 10 science laboratories, with funding support from DOE, and to cooperate with the department in preparing cost estimates to bring the laboratories into compliance with external regulations.[9] The final DOE report is due no later than April 30, 2004.

According to DOE, the transition costs to external regulation could be high, depending on the flexibility of the regulators in applying their standards to the department's unique facilities without compromising safety. We have previously reported, however, that DOE would likely incur many of these costs anyway if the department were to bring the

[6] U.S. General Accounting Office, *Department of Energy: Fundamental Reassessment Needed to Address Major Mission, Structure, and Accountability Problems*, GAO-02-51 (Washington, D.C.: December 21, 2001).

[7] GAO-02-868R.

[8] Department of Energy, *Observations on Externally Regulating Nuclear and Worker Safety in DOE's Science Laboratories*, GAO-02-974T (Washington, D.C.: July 25, 2002).

[9] H.R. Rep. No. 108-10, February 12, 2003, at 898-899.

laboratories into compliance with DOE's own safety and health standards. The annual costs after transition are primarily associated with increasing NRC and OSHA staffs to assume regulatory responsibilities for the science laboratories. In a DOE implementation plan for external regulation submitted to the Congress in July 2002,[10] these agencies anticipated they would need an additional $6.9 million annually for this purpose.[11]

DOE Spends About $145 Million Annually on Safety and Health Activities

In FY 2002, DOE spent $145.3 million on safety and health activities associated with its 10 science laboratories. DOE data indicate that this level of spending has not changed much in the previous 4 years.[12] This expenditure represented about 16 percent of total department spending on safety and health activities in FY 2002, compared to the 35 percent spent at National Nuclear Security Administration sites and the 45 percent spent at DOE environmental management sites.[13] The reported expenditure does not include corrective maintenance for the repair of failed or malfunctioning equipment.

Of the safety and health costs for the science laboratories, the portion spent on DOE oversight was about $8.6 million. This $8.6 million covered primarily the cost of the approximately 74 full-time equivalent (FTE) employees involved in safety and health policy development and oversight of the laboratories, most of whom (approximately 89 percent) were located in field offices.

The M&O contractors, however, incurred the vast majority of the $145.3 million in safety and health costs. The cost of their safety and health activities in FY 2002 was $136.7 million. For the most part, this expenditure supported the nearly 1,334 FTEs involved in these activities, comprising 3 to 9 percent of the laboratories' workforces. As reported to us, expenditures on safety and health activities by the M&O contractors represented about 3 percent of their total budgets.

[10] Department of Energy, *Implementation Plan for External Regulation of Non-Defense Science Laboratories.* (Washington, DC: July 1, 2002).

[11] The regulatory agencies anticipate the need for an additional 24 full-time employees at NRC and an additional 19 at OSHA.

[12] Based on data obtained from DOE's Functional Cost Report of 30 Major DOE Contractor Sites, the variation in safety and health costs since 1998 has been less than a 5 percent.

[13] The remaining small percentage of total safety and health costs went to miscellaneous activities.

Table 1 summarizes the safety and health FTE levels and costs for DOE and the M&O contractors and compares these costs with overall budgets.

Table 1: Safety and Health FTEs and Costs in Fiscal Year 2002

Dollars in millions

Location	Safety and health FTEs	Safety and health costs	Overall budget	Percent of budget
DOE field offices	65.3	$7.5	$137.5	5.4
DOE headquarters	8.5	1.1	98.3	1.1
M&O contractors	1,333.8	136.7	4,201.3	3.3
Total	**1,407.6**	**$145.3**	**$4,437.2**[a]	**3.3**

Source: Figures for safety and health FTEs and costs were derived from responses to data collection instruments sent to cognizant managers in these organizations. The overall budget figure for the DOE headquarters offices is based on their program direction funding in fiscal year 2002. The budget figures for the DOE field offices affiliated with the 10 science laboratories and their M&O contractors came from responses to our survey.

[a]Total does not add up because of rounding.

Annual Safety and Health Savings of Up to $41 Million Possible, Depending on Level of DOE Oversight

Up to about $41 million annually in DOE's safety and health cost savings might accrue after the department shifts to external regulation, depending on the level of continued departmental oversight of safety and health activities. However, if DOE does not alter its oversight approach, especially through a reduction of contractual reporting requirements and ad hoc information requests of the M&O contractors, shifting to external regulation might require additional safety and health personnel, potentially increasing annual DOE safety and health costs by up to about $5 million.

Our data collection instruments included three scenarios that asked DOE and M&O contractor safety and health managers how staffing levels might change under various levels of DOE oversight after NRC and OSHA begin regulating and inspecting the science laboratories. We developed a fourth scenario to provide an independent assessment of potential safety and health staff reductions for both DOE and its M&O contractors based on the experiences of another federal agency and its science laboratory which is already externally regulated. We selected the Jet Propulsion Laboratory, owned by the National Aeronautics and Space Administration (NASA), as a performance benchmark because DOE had already identified it as a federally funded research and development center comparable to its science laboratories. DOE has used the NASA interaction with the Jet Propulsion Laboratory contractor to identify best management practices for improving the overall efficiency and cost-effectiveness of its

laboratories.[14] The Jet Propulsion Laboratory concentrates its research on unmanned space operations, including solar system exploration, space and earth observing systems, robotic technology for space exploration, computational sciences for assimilation of large databases, and advanced instrumentation. The laboratory contractor holds all safety and health licenses with external regulators, and DOE considers this laboratory's safety levels to be similar to that of its Lawrence Berkeley National Laboratory. In comparison to the Berkeley Lab and some other DOE science laboratories, however, the Jet Propulsion Laboratory has a small radioactive materials program, and it has no accelerator. On the other hand, the laboratory has about 30 percent more employees (about 5,200 employees mostly at three sites in southern California) and over twice the operating budget (about $1.4 billion in fiscal year 2002) compared to the largest DOE science laboratory.

The four scenarios of DOE oversight are:

- **Scenario 1:** DOE holds all applicable licenses and permits with external regulators, eliminates the M&O contract requirements that duplicate those of the external regulatory agencies, but retains its current approach to contract performance oversight.
- **Scenario 2:** The same as the first scenario, but the M&O contractor, instead of DOE, holds any licenses and permits issued by external regulatory agencies.
- **Scenario 3:** The same as the second scenario, but DOE changes its approach to contract performance oversight, relying instead on best industry practices and norms for safety and health risk management.
- **Scenario 4:** DOE adopts the safety and health management approach used by NASA at its Jet Propulsion Laboratory. This approach is essentially NASA's application of scenario 3.

Table 2 provides estimated changes in annual safety and health costs under the four scenarios for DOE oversight. The first scenario resulted in a projected increase in safety and health costs, while the other scenarios produced decreases in these costs through anticipated reductions in safety and health FTEs. Any reduction in annual DOE safety and health costs, however, might not produce overall budgetary savings, in part because the external agencies would need to supplement their staffs to regulate and inspect the science laboratories. In addition, there might not be immediate

[14] Berkeley Lab. *DOE Best Practices Pilot Study*, LBNL/PUB-865 (Berkeley, CA: February 2002).

savings to DOE, given the transition costs to bring the laboratories into compliance with national safety and health regulations, irrespective of their present conditions relative to DOE's own standards. Further, both DOE and the M&O contractors might transfer safety and health personnel to other functional areas in their respective organizations rather than eliminate these positions to reduce overall operating costs. Nevertheless, any savings in DOE safety and health personnel costs might be transferred to NRC and OSHA to help defray their increased costs, and reducing the safety and health personnel now required to meet the significant information needs of DOE might allow the M&O contractors to shift some of these resources to more science mission work or to needed maintenance and infrastructure upgrades.

Table 2: Estimated Savings in Annual Safety and Health Costs

Dollars in millions				
Location	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**
DOE field offices	($1.1 to $1.2)	$0.2	$0.2 to $0.8	$5.9
M&O contractors	(2.9 to 4.0)	0.4 to 0.8	7.4 to 8.7	35.2
Total	**($4.0 to $5.2)**	**$0.6 to $0.9**[a]	**$7.6 to $9.5**	**$41.2**[a]

Source: Negative or positive savings estimates were derived from responses to data collection instruments sent to cognizant managers in these organizations. DOE headquarters offices indicated no staffing changes for the first three scenarios and we did not estimate them in the fourth scenario.

Note: Dollar values were derived by multiplying the number of FTEs (either projected safety and health position increases in scenario 1, or position decreases in the other scenarios) by the average cost of an FTE as reported for each location.

[a]Totals do not add up because of rounding.

Projected changes in safety and health costs for the first three scenarios were derived from responses to our survey of DOE field offices and M&O contractors. Headquarters offices did not project any staffing changes under the first three scenarios. For scenario 4, we calculated changes in DOE's field staff by applying NASA's safety and health staffing approach (i.e., reducing safety and health field FTEs to one per laboratory). In calculating potential changes for M&O contractor staff, we determined that the Jet Propulsion Laboratory's safety and health staffing levels were about 28 percent less than at DOE's Lawrence Berkeley National Laboratory, even after DOE had adjusted staffing figures downward to account for differences in personnel functions at the two laboratories.[15]

[15] In the *DOE Best Practices Pilot Study* report, DOE adjusted the safety and health staffing figure downward from 150 to 41 at the Berkeley Lab and from 50 to 40 at Jet Propulsion Laboratory.

For example, DOE excluded its own safety and health personnel involved in radiation safety and environmental radiation monitoring, health services, and fire protection because it was determined that these functions were not performed by the safety and health personnel at the Jet Propulsion Laboratory. We then applied the 28 percent reduction to each of the 10 DOE science laboratories to estimate potential savings, although the potential for this reduction would vary among the laboratories, depending on the circumstances presented. We did not calculate any staff changes for DOE headquarters.

Implementing scenario 4 could potentially provide the greatest savings to offset the transition costs and the annual cost increases anticipated for additional NRC and OSHA personnel under external regulation. Implementing this scenario, however, would also require the most dramatic changes in DOE's oversight culture, particularly in contract administration and the responsibilities placed on safety and health personnel. Our analysis suggests that, to a large extent, the safety and health staffing levels across DOE field offices and the M&O contractors are driven by the need to monitor and respond to the numerous safety and health contractual reporting requirements and ad hoc information requests. Eliminating unnecessary information requests after shifting to external regulation could justify a reduction or redirection of safety and health personnel that would lower safety and health costs.

DOE has recognized the need to fundamentally change its contract administration process to improve contractor efficiency and effectiveness and to enhance accountability. In April 2002, DOE formulated principles to guide the development of pending contracts with three science laboratories.[16] The management practices at NASA's Jet Propulsion Laboratory were used to support these principles. One of the principles calls for reliance on national standards to establish contractor requirements and performance criteria, while minimizing the use of DOE orders and directives that place administrative and operational requirements on the contractor. Applying this principle alone, in conjunction with adopting external regulation, would help to move DOE toward the potential safety and health savings projected in scenario 4.

[16] Memorandum for Heads of Departmental Elements, the Under Secretary of Energy, Robert G. Card, *Principles for Office of Science Laboratory Contracts*, Department of Energy: April 30, 2002.

Agency Comments

We provided a draft of this report to DOE for its review and comments. Written comments are presented and evaluated below and are reprinted in enclosure II. In commenting on our report, the Deputy Secretary of Energy expressed several concerns about our analysis and the need to shift to external regulation. For example, DOE commented that because our cost estimates were not independently verified, they are not "decision-quality information." Other comments pertained to our estimates of department savings in safety and health costs after shifting to external regulation of the science laboratories. For example, DOE questioned our calculation of potential reductions in safety and health costs and the level of information necessary to monitor these activities. Finally, DOE raised some concerns about transition costs and other potential costs associated with shifting to external regulation. While we agree that our assessment of safety and health costs for the department was hindered by limitations in the availability of budget quality data, our method of estimating these costs was reasonable. Further, given the uncertainties about future roles, responsibilities and interactions among DOE and its M&O contractor safety and health personnel after shifting to external regulation, providing a range of savings estimates based on a combination of survey responses from the individuals responsible for these activities and our own calculations, make us confident that our assessment is independent and credible. Finally, while we were not asked to assess the transition costs and other potential costs and benefits of shifting to external regulation in this report, we have discussed these issues in previous reports. At this point, with the analysis undertaken on this issue over the years, it seems to us that philosophical opposition rather than data limitations is the main stumbling block to the department's shift to external regulation. Our specific comments to each of the concerns raised by DOE are in enclosure II.

Scope and Methodology

To obtain information on the cost of safety and health activities and on the potential for reductions under different DOE oversight scenarios, we relied for the most part on data collection instruments that we sent to DOE and M&O contractor officials associated with the 10 science laboratories. We also visited NASA's Jet Propulsion Laboratory, a federally funded research and development center that we selected because it is comparable to DOE's science laboratories and because the department has already used it as a performance benchmark. In addition, we obtained safety and health cost data from centralized data systems to compare with our survey data. We did not independently verify the accuracy of the self-reported data, nor did we undertake an independent study of the current and proposed safety and health staffing levels for DOE and its contractors,

or of the proposed additions to NRC and OSHA staffs. We did, however, compare responses among the laboratories and follow up with respondents when necessary. We also encouraged narrative explanations of the responses. To obtain additional information, we spoke with DOE headquarters and field office officials. We conducted our work between August 2002 and March 2003 in accordance with generally accepted government auditing standards.

As agreed with your offices, we will make copies of this report available to others upon 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 about this report, please contact me at (202) 512-3841 or Dan Feehan, Assistant Director, at (303) 572-7352. Major contributors to this report include Joel Grossman, Thomas Laetz, Mehrzad Nadji, Cynthia Norris and Michael Sagalow.

Robin M. Nazzaro

Robin Nazzaro
Director, Natural Resources
and Environment

Enclosure

Enclosure I: Briefing Slides

Department of Energy: External Regulation Savings in Safety and Health Activities at DOE Science Laboratories

Prepared for the Subcommittee on Energy and Water Development, House Committee on Appropriations

March 28, 2003

GAO
Accountability * Integrity * Reliability

Research Objectives

GAO was asked to:

1. Determine how much DOE spends on safety and health activities at its 10 science laboratories

2. Determine how much DOE might save after shifting to external regulation of these laboratories

Note: See Appendix I for a listing of these laboratories

2

GAO
Accountability * Integrity * Reliability

Background

- DOE is exempt from NRC and OSHA regulations to protect nuclear safety and worker safety and health (S&H) at its science laboratories and most other facilities
- S&H activities include emergency preparedness, fire protection, industrial hygiene, industrial safety, occupational medical services, nuclear safety, radiation safety, transportation safety, and the management and reporting of these activities
- DOE uses a contract administration process as a mechanism for placing administrative and operational S&H requirements on its management and operating (M&O) contractors, in addition to requiring responses to ad hoc information requests
- DOE asserts that its S&H standards generally meet or exceed NRC and OSHA standards
- DOE has studied shifting to external regulation over the last decade but has decided against doing so because the department has stated that it will not improve worker S&H and may involve significant transition costs and complications
- GAO has studied the issue since the late 1990s and has supported a DOE shift to external regulation in several recent reports

3

GAO
Accountability * Integrity * Reliability

Scope and Methodology

For this review, GAO:

- Sent questionnaires to DOE field office and contractor S&H managers associated with the10 science laboratories to obtain information on staffing, costs, and potential savings
- Obtained cost information on S&H activities from DOE information systems and HQ offices
- Interviewed officials at the (1) Office of Science and Office of Environment, Safety & Health at DOE HQ, (2) Oakland Operations Office and Berkeley, Brookhaven and Stanford Site Offices in the field offices, and (3) M&O contractors at Brookhaven and Stanford
- Interviewed officials at the National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL), a federally-funded R&D center comparable to DOE science labs
- Conducted the review between August 2002 and March 2003 in accordance with Generally Accepted Government Auditing Standards

4

Limitations

GAO did not:

- Independently verify the accuracy of self-reported survey data
- Undertake an independent personnel study of current or anticipated S&H staffing levels in DOE and its M&O contractors
- Review proposed increases in staffs at NRC and OSHA, or predict how well and how they would regulate the science labs
- Assess the transition costs in moving to external regulation

Other limitations:

- DOE's cost accounting system is not designed to directly track S&H costs
- There is an absence of set definitions for what costs should be included under S&H activities

To address the limitations:

- GAO encouraged narrative explanations of the survey responses, compared responses among the M&O contractors and DOE offices, and followed up when necessary

5

Total S&H Costs in FY 2002

Response to Research Objective 1:

DOE spent about **$145 million** on S&H activities associated with the 10 science labs

- DOE has generally spent about this amount annually for the last 4 years
- This amount was about 16 percent of total department-wide S&H costs
- This amount is almost entirely personnel costs and does not include other costs, such as corrective maintenance for the repair of failed or malfunctioning equipment

6

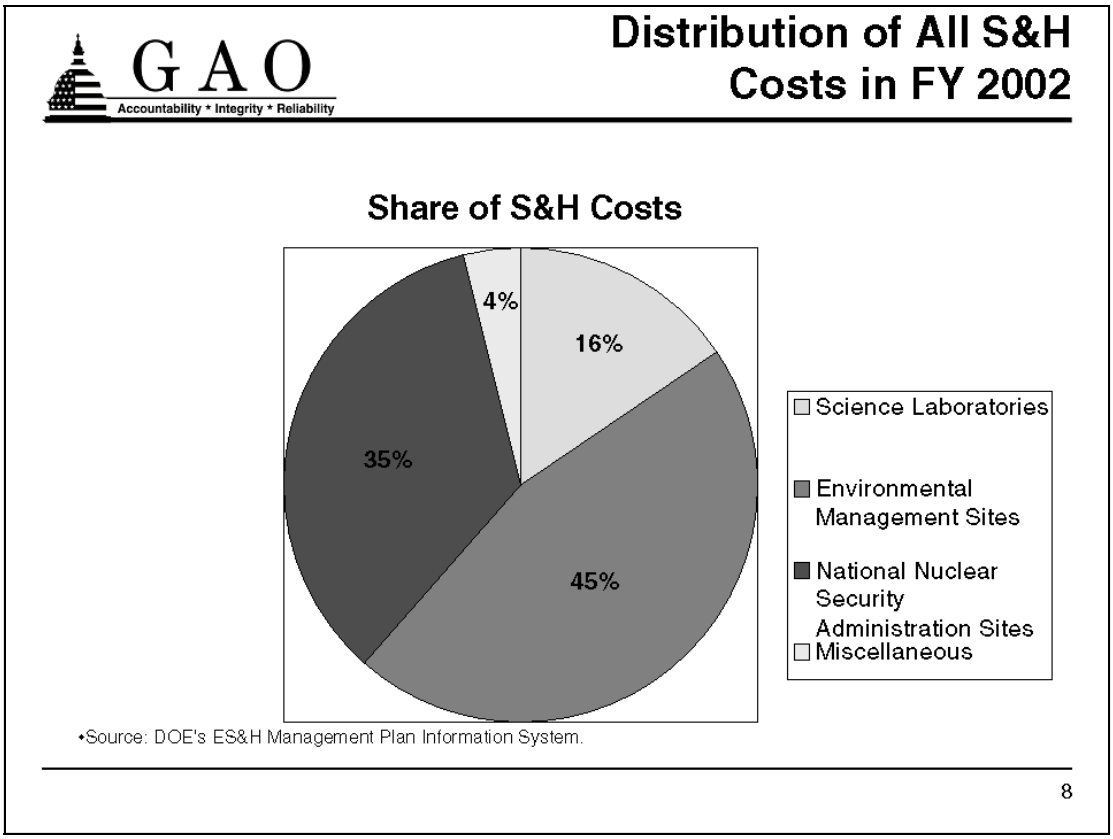
Summary Of S&H FTEs and Costs in FY 2002

Dollars in millions

Location	S&H FTEs[1]	S&H Costs	Overall Budget[2]	Percent of Budget[2]
DOE Field Offices	65.3	$7.5	$137.5	5.4
DOE Headquarters	8.5	1.1	98.3	1.1
M&O Contractors	1,333.8	136.7	4,201.3	3.3
Total	**1,407.6**	**$145.3**	**$4,437.2[3]**	**3.3**

[1] Full time equivalent employees.
[2]The total budget figure for the DOE headquarters offices are based on their program direction funding in FY 2002. The budget figures for the DOE field offices affiliated with the 10 science labs and their M&O contractors came from responses to the GAO survey.
[3]Total does not add up because of rounding.

7

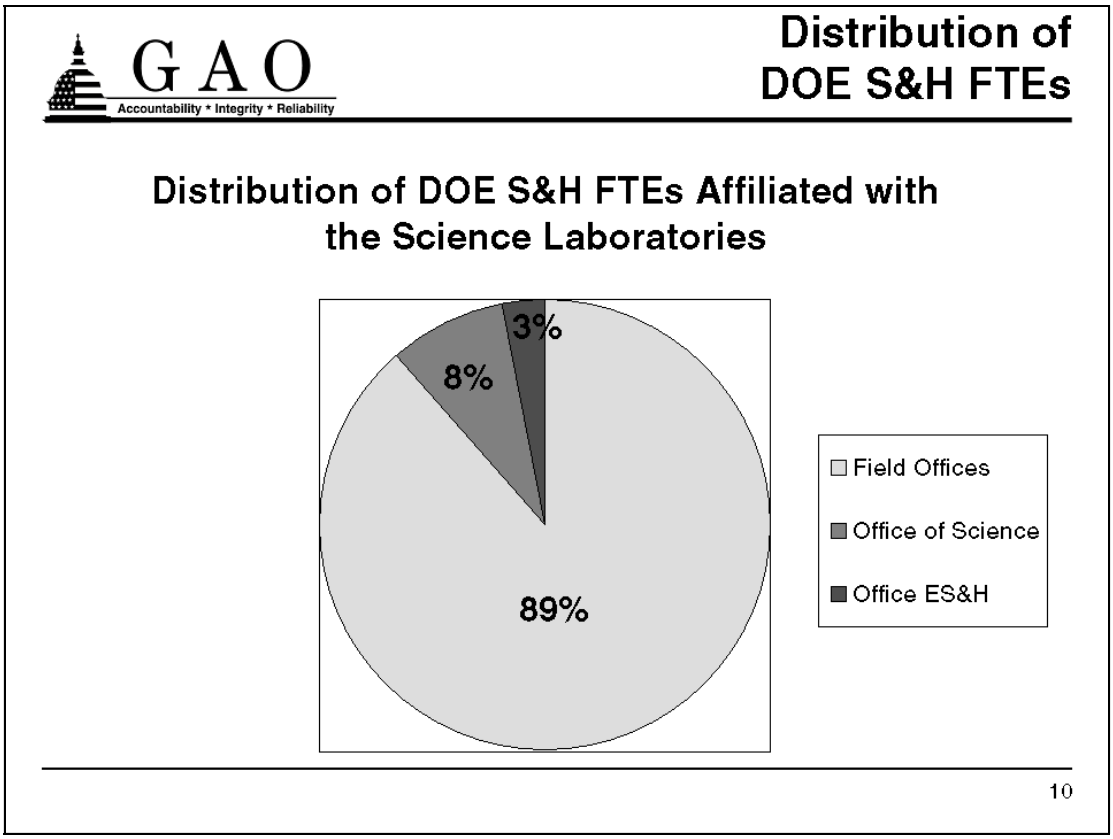

GAO
Accountability * Integrity * Reliability
Distribution of All S&H Costs in FY 2002
Share of S&H Costs
4%
16%
35%
45%
Science Laboratories
Environmental Management Sites
National Nuclear Security Administration Sites
Miscellaneous
•Source: DOE's ES&H Management Plan Information System.
8

S&H Oversight Costs in FY 2002

S&H costs for DOE oversight at the 10 science labs were about **$9 million**

$ 7.5 million	Field offices
0.8 million	HQ Office of Science
0.3 million	HQ Office of Environment, Safety & Health
$ 8.6 million	**Total**

9


GAO
Accountability * Integrity * Reliability
Distribution of DOE S&H FTEs
Distribution of DOE S&H FTEs Affiliated with the Science Laboratories
3%
8%
89%
Field Offices
Office of Science
Office ES&H
10

M&O Contractor S&H Costs in FY 2002

S&H costs for the M&O contractors at the 10 science labs were about **$137 million**

Dollars in millions

$ 1.2	Ames Laboratory
30.0	Argonne National Laboratory (East)
21.6	Brookhaven National Laboratory
8.6	Fermi National Accelerator Laboratory
12.3	Lawrence Berkeley National Laboratory
30.5	Oak Ridge National Laboratory
15.2	Pacific Northwest National Laboratory
3.6	Princeton Plasma Physics Laboratory
7.7	Stanford Linear Accelerator Center
6.0	Thomas Jefferson National Accelerator Facility
$136.7	**Total**

11

GAO
Accountability * Integrity * Reliability

Potential S&H Savings

Response to Research Objective 2:

Based on four DOE oversight scenarios after shifting to external regulation, annual S&H costs could range from a

- decrease of about **$41 million**

  to an
- increase of about **$5 million**

12

GAO
Accountability * Integrity * Reliability

Four DOE S&H Oversight Scenarios

Scenario 1: NRC and OSHA become the S&H regulators;[1] DOE holds all applicable licenses and permits with these agencies; DOE eliminates S&H requirements in its M&O contracts that would duplicate requirements of external regulators, but retains current approach to contract performance oversight

Scenario 2: Same as first scenario, but the contractor holds all applicable licenses and permits, not DOE

Scenario 3: Same as second scenario, but DOE changes its approach to contract performance oversight, relying instead on best industry practices and norms for S&H risk management

Scenario 4: DOE adopts the S&H approach used by NASA at its Jet Propulsion Laboratory[2]

[1]We did not specify in the regulatory scenarios how NRC and OSHA may implement their new responsibilities with respect to the DOE science laboratories, or specify any changes in contractor liability.

[2]Scenario 4 is essentially the application of scenario 3 by NASA.

13

Comparison of DOE Labs with JPL

DOE has used NASA's management approach at JPL to identify best practices for improving the efficiency and cost-effectiveness of its science labs[1]

DOE considers JPL a comparable federally funded R&D center in that it:

- Conducts scientific R&D programs and runs user facilities for the scientific community
- Is primarily supported by a single federal agency, but also carries out some work for other government agencies and private parties
- Has similar safety levels

JPL differs in that:

- It has about 30 percent more employees and over twice the operating budget of the largest DOE science lab
- It is externally regulated for S&H activities
- The contractor holds all S&H licenses and permits
- It has a smaller radioactive materials program and no accelerators

[1]Berkeley Lab, *DOE Best Practices Pilot Study*, LBNL/PUB-865 (Berkeley, CA: February 2002)

14

Comparison of S&H Management Approaches

Management comparisons between NASA/JPL and DOE/science labs:

Contractually required S&H reports:

- JPL's contract requires 10 S&H reports annually
- DOE M&O contracts require, on average, 38 S&H reports annually for each laboratory

Ad hoc information requests:

- JPL negotiates need to respond to 20 to 30 ad hoc requests annually
- DOE M&O contractors respond, on average, to 77 ad hoc requests annually for each laboratory (ranging from 15 to 200 ad hoc requests each year)

Federal S&H FTEs per lab:

- NASA has 1 per lab
- DOE averages about 7 per lab

Adjusted M&O contractor S&H FTEs per 1,000 lab employees:[1]

- JPL has about 8 per 1,000 employees
- DOE science labs have about 11 per 1,000 employees (i.e., Lawrence Berkeley National Laboratory)

[1]Based on S&H staffing adjustments made by DOE to account for differences between S&H activities at its lab and JPL. For example, DOE excluded JPL's system safety office that addresses flight operations hazards.

15

Summary of Annual S&H Savings

Dollars in millions

Location	Scenario 1	Scenario 2	Scenario 3	Scenario 4
DOE	($1.1 to 1.2)	$0.2	$ 0.2 to $ 0.8	$5.9
M&O contractor	(2.9 to 4.0)	0.4 to 0.8	7.4 to 8.7	$35.2
Total	**($4.0 to $5.2)**	**$0.6 to $0.9[1]**	**$7.6 to $9.5**	**$41.2[1]**

Note: Dollar values were derived by multiplying the number of FTEs (either projected safety and health staff increases in scenario 1, or staff decreases in the other scenarios) by the average cost of an FTE as reported for each location. [1] Total does not add up because of rounding.

16

GAO
Accountability * Integrity * Reliability

Annual DOE S&H Oversight Savings

Dollars in millions

Location	Scenario 1	Scenario 2	Scenario 3	Scenario 4
DOE field offices[1]	($1.1 to $1.2)	$0.2	$0.2 to $0.8	$5.9[3]
DOE HQ offices[2]	0	0	0	Not available[4]
Total	**($1.1 to $1.2)**	**$0.2**	**$0.2 to $0.8**	**$5.9**

[1]Field Offices comprise 10 DOE site or area offices, and 3 operations offices.
[2]HQ Offices consist of the Office of Science and Office of Environment, Safety and Health.
[3]Under this scenario there would be only one S&H field FTE per laboratory.
[4]We did not compare S&H staffing at DOE headquarters with similar S&H staffing at NASA headquarters.

17

DOE S&H Personnel Changes

Changes in DOE **field office** S&H staffing under the four oversight scenarios

- **Scenario 1:** 17% increase or 11.3 FTEs[1]
- **Scenario 2:** 5% decrease or 1.5 FTEs
- **Scenario 3:** 10% decrease or 6.8 FTEs[1,2]
- **Scenario 4:** 81% decrease or 52.7 FTEs

Note: Staff changes for the first three scenarios are based on estimates provided by DOE S&H field managers. No staffing changes are projected for headquarters offices. To calculate the staff changes for scenario 4, GAO applied the NASA S&H staffing approach of one federal FTE per laboratory.

[1]Of the range of staffing changes provided in the survey, these numbers reflect the greatest anticipated cost increase or greatest anticipated cost decrease.

[2]About 75 percent of the anticipated reduction in FTEs came from one field office.

18

GAO
Accountability * Integrity * Reliability

Annual M&O Contractor S&H Savings

Dollars in millions

Location	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Ames	($0.03)	$0	$0	$0.3
Argonne (East)	(0.3 to 0.7)	0	1.3 to 2.0	7.1
Brookhaven	(0.6 to 0.8)	(0.4 to 0.6)	0.3 to 0.5	5.3
Fermi	(0.2 to 0.4)	(0.1 to 0.2)	0.3 to 0.5	2.7
L. Berkeley	(0.2)	0	0.8	2.7
Oak Ridge	(0.5 to 0.6)	1.6	3.9	7.6
Pacific Northwest	(0.3 to 0.4)	(0.2 to 0.3)	0.4 to 0.6	4.1
Princeton	(0.1 to 0.2)	0	0	0.7
Stanford	(0.4 to 0.5)	0	0.4 to 0.5	3.4
Thomas Jefferson	(0.3)	(0.2)	0	1.5
Total	**($2.9 to $4.0)**	**$0.4 to $0.8**	**$7.4 to $8.7**	**$35.2**

Note: Savings in FY 2002 dollars. Totals do not add up because of rounding.

19

M&O Contractor S&H Personnel Changes

M&O contractor S&H staffing changes under the four oversight scenarios

- **Scenario 1:** 3 % increase or 42.5 FTEs[1]
- **Scenario 2:** 1 % decrease or 11.5 FTEs[1]
- **Scenario 3:** 7 % decrease or 95.0 FTEs[1, 2]
- **Scenario 4:** 28 % decrease or 375.4 FTEs

Note: Staff changes for the first three scenarios are based on estimates provided by M&O contractor S&H managers. In calculating the staff changes for scenario 4, GAO determined that the JPL S&H staffing levels were about 28.1 percent less than at the Berkeley Lab, even given the significant adjustments made by DOE. GAO then applied the same percentage reduction to each of the 10 DOE science labs.

[1]Of the range of staffing changes provided in the survey, these numbers reflect the greatest anticipated cost increase or greatest anticipated cost decrease.

[2]Over 50 percent of anticipated reduction in FTEs came from one laboratory.

20

Maximizing S&H Savings

- Implementing scenario 4 could provide the greatest savings to potentially offset the transition costs and the annual cost increases anticipated for additional NRC and OSHA FTEs, however, there might not be overall budgetary savings[1]
- Implementing this scenario would require a dramatic change in DOE's oversight culture, particularly in contract administration and the responsibilities placed on staff
- The current level of DOE and M&O contractor S&H staffing is driven to a large extent by the response needed to satisfy the S&H contractual reporting requirements and ad hoc information requests

[1] The total transition costs are still not known. NRC and OSHA have estimated that their annual costs for regulating the science labs would be about $6.9 million.

21

GAO
Accountability * Integrity * Reliability

Maximizing S&H Savings

- DOE has initiated a review of the science laboratory M&O contracts to develop innovative approaches and techniques for improving contractor performance and contract administration.
- In April 2002, DOE formulated principles to guide the development of three pending science laboratory contracts. These principles were based in part on the best practice management approaches used by NASA and JPL.
- One principle would have DOE rely on national standards to establish contractor requirements and performance criteria, while minimizing the use of DOE orders and directives as a mechanism for placing administrative and operational requirements on the contractor.
- Applying this one principle alone, along with shifting to external regulation, would help to move DOE towards the potential S&H savings projected in scenario 4.

22

GAO
Accountability * Integrity * Reliability

Appendix I: DOE's 10 Science Laboratories

Multi-program laboratories

1. **Argonne National Laboratory**-East, Argonne, IL (University of Chicago)
2. **Brookhaven National Laboratory**, Upton, NY (Brookhaven Science Associates)
3. **Lawrence Berkeley National Laboratory**, Berkeley, CA (University of California)
4. **Oak Ridge National Laboratory**, Oak Ridge, TN (UT-Battelle, LLC)
5. **Pacific Northwest National Laboratory**, Richland, WA (Battelle Memorial Institute)

Single-purpose laboratories

1. **Ames Laboratory**, Ames, IA (Iowa State University)
2. **Fermi National Accelerator Laboratory**, Batavia, IL (University Research Association)
3. **Princeton Plasma Physics Laboratory**, Princeton, NJ (Princeton University)
4. **Stanford Linear Accelerator Center**, Menlo Park, CA (Stanford University)
5. **Thomas Jefferson National Accelerator Facility**, Newport News, VA (Southeastern University Research Association)

23

Enclosure II: Comments from the Department of Energy

Note: GAO comments appear at the end of this appendix.

The Deputy Secretary of Energy
Washington, DC 20585

APR 28 2003

Ms. Robin M. Nazzaro
Director, Natural Resources and Environment
U.S. General Accounting Office
Room 2T23
441 G Street, N.W.
Washington, D.C. 20548

Dear Ms. Nazzaro:

Thank you for the opportunity to comment on the draft General Accounting Office (GAO) report "Department of Energy: External Regulation Savings in Safety and Health Activities at DOE Science Laboratories" (GAO-03-633R.)

GAO's report focused on two issues: 1) How much the Department of Energy (DOE) spends on safety and health; and 2) How much DOE might save after shifting to external regulation. Based on its analysis, GAO estimated that DOE spent approximately $145 million in fiscal year 2002 on safety and health for the ten DOE Science laboratories. Furthermore, GAO indicated that annual safety and health costs could decrease by $41 million or increase by as much as $5.2 million under a shift to external regulation, depending on the safety and health oversight scenario.

The Department has several concerns regarding the limitations of GAO's analysis, which are described in the enclosure. If you have any questions regarding the Department's comments, please contact Mr. James T. Campbell, Acting Director, Office of Management, Budget and Evaluation/Acting Chief Financial Officer, at (202) 586-4171.

Sincerely,

Kyle E. McSlarrow

Enclosure

Printed with soy ink on recycled paper

Department of Energy Comments on
Draft General Accounting Office Report
"Department of Energy: External Regulation Savings in Safety and Health Activities at DOE Science Laboratories" (GAO-03-633R.)

1. The first three external regulation scenarios described by GAO produced results ranging from a cost increase of between $4 million and $5.2 million annually to a cost savings of between $7.6 million and $9.5 million annually; however, GAO noted that these figures do not include the cost of additional NRC and OSHA staff required to address the expanded workload, estimated to be around $7 million annually. Taken entirely at face value, these figures indicate that the first three scenarios would result in little if any savings. Moreover, for many of the reasons we indicate in our more detailed discussion of scenario 4, we believe there are reasons to question the results under the first three scenarios as well.

2. Under scenario 4, the GAO calculated potential savings of $41 million. The core of those savings comes from the following two propositions:

- "that, to a large extent, the safety and health staffing levels across DOE field offices and the M&O contractors are driven by the need to monitor and respond to the numerous safety and health contractual reporting requirements and ad hoc information requests[;]" and that

- "[e]liminating unnecessary information requests after shifting to external regulation could justify a reduction or redirection of safety and health personnel that would lower safety and health costs." (Emphasis added.)

3. It is axiomatic that eliminating "unnecessary" information requests would lower costs without any negative effect on health and safety. But the report does not provide any supporting analysis or examples of "unnecessary" vs. necessary DOE reporting requirements or any explanation for the implication that external regulation will facilitate the elimination of "unnecessary" information requests while preserving necessary ones.

4. We think it highly counterintuitive that this will in fact be the result. It seems almost certain to us that under external regulation, three different entities (DOE, NRC, and OSHA) will each be requesting information for their own purposes. Even if DOE's requests for information plummet significantly, DOE will continuPage 1 of 5e to need some health and safety information for contract administration purposes. Meanwhile, we think it quite unlikely that NRC's and OSHA's needs for information from our contractors will be less than DOE's current requests. DOE has some experience with NRC-licensed facilities. That experience suggests to us that if they are licensed by NRC, contractors will, among other things, likely need outside legal services to address licensing issues, which even without any other increased costs are likely to increase contractor costs for generating information needed to respond to regulators substantially over what they are now.

5. In addition, external regulation is far from the most plausible mechanism through which "unnecessary" information requests may be eliminated. The FY 2003 Defense Authorization bill directed DOE to promulgate a worker safety rule by December 2, 2004. In the course of promulgating that rule, DOE intends to examine carefully its current practices for requesting information from its contractors relating to health and safety and to address any legitimate concerns that its current oversight approach results in unnecessary information requests. That process should allow DOE to achieve the cost savings that the Report assumes from external regulation if in fact they are genuinely achievable because the requests for information are in fact "unnecessary."

6. The corollary is that the Report's attribution of these cost savings to external regulation is not well founded. If they are genuine, they can be achieved not by a shift to external regulation, but by an improvement in DOE's oversight practices. In fact, a shift to external regulation seems to us likely to make it harder rather than easier to achieve these improvements.

7. The only basis for the Report's savings estimates under scenario 4 is that it applies a 28 percent reduction across all science laboratories based on relative health and safety staffing levels of NASA's JPL and DOE's Lawrence Berkeley National Laboratory. While the Department acknowledges there may be similarities between these two laboratories, we believe a detailed analysis of relative hazards and operating characteristics (including types and inventories of nuclear materials requiring active regulation under NRC standards) would be necessary to determine how similar they are in relevant respects. We also believe such a comparison would be necessary on a laboratory-by-laboratory basis before concluding that JPL is similar to other DOE science laboratories.

8. We would also note that the cost information included in GAO's report is based primarily on responses to survey instruments that GAO distributed to DOE and M&O contractor officials. Neither the GAO nor the Department independently verified the accuracy of the reported information. Therefore, the cost information does not represent decision-quality information.

9. GAO acknowledged that the study did not consider transition costs to bring facilities into compliance with current NRC and OSHA standards, but repeats the unsupported assertion that "DOE would likely incur much of these [transition to OSHA and NRC regulation] costs anyway if the department were to bring the laboratories into compliance with its own safety and health standards." DOE is aware of no basis for that assumption and does not believe there is any way of verifying it. DOE believes that its current health and safety orders as currently applied achieve comparable levels of protection of health and safety to those that would be achieved under NRC and OSHA regulation. But because there are likely numerous ways of achieving the same levels of protection, DOE knows of no basis for assuming that they would be achieved in the same fashion and at the same cost under NRC and OSHA regulation.

10. In particular, the report did not take into account the Integrated Safety Management Systems clause in the DOE procurement regulations, which requires DOE contractors to establish an integrated safety management system. Under this approach, a contractor must define work, analyze hazards, set standards and controls, perform work safely and provide feedback and improvement. The relevant standards and controls are then included in the contract through standard clauses. This allows DOE and the contractor to identify a set of standards, practices, and controls for health and safety that make sense for and are tailored to the specific work and associated hazards. If OSHA and NRC begin to regulate DOE facilities, DOE and its contractors would likely no longer have this flexibility.

    This deficiency is especially important since the report repeats the unsupported assertion that "DOE would likely incur much of these [transition to OSHA and NRC regulation] costs anyway if the department were to bring the laboratories into compliance with its own safety and health standards." The report fails to acknowledge the flexibility of the current DOE approach and the fact that this approach has achieved a high level of worker protection. In fact, in the National Defense Authorization Act for Fiscal Year 2003 (FY03 DOD Authorization), Congress directed the Department to adopt regulations on worker protection that maintain "the level of protection currently provided to [its] workers" and to include flexibility in those regulations to tailor implementation of such regulations to reflect activities and hazards associated with a particular work environment.

11. Footnote 1 indicates the science laboratories are also known as nonmilitary energy laboratories. We are not sure what is meant by a "nonmilitary energy laboratory," which is not a common DOE usage. Some legislation has distinguished between laboratories under the supervision of the NNSA versus laboratories under the supervision of other DOE entities. That may be the distinction that the Report aims to capture. In fact, however, DOE has laboratories such as INEEL that are neither supervised by NNSA nor by the Office of Science, that would therefore be "nonmilitary" if that is the usage the Report has in mind, but that we do not believe were examined during preparation of the Report. In any event, characterizing a laboratory as a military or non-military does not capture the reality of the scope of activities undertaken by that laboratory as part of the Departmental complex and as a national scientific resource. Much very important national security work is accomplished at laboratories that are not part of the National Nuclear Security Administration (NNSA). This defense work may be funded by NNSA, by other elements of the U.S. Government, or by private organizations or international organizations such as the International Atomic Energy Agency (IAEA). Looking at only NNSA-funded work -- that is to say, excluding work for the Defense Department and other non-DOE national security directed departments and agencies -- in FY 2002 the non-NNSA managed laboratories engaged in over $300 million of NNSA-funded activity, including $28.9 million at Argonne, $51.5 million at Brookhaven, $62.1 million at INEEL, $130.2 million at Oak Ridge, and $164.6 million at the Pacific Northwest National Laboratory (PNNL). To give an example of just one project: PNNL, a "nonmilitary laboratory" under this usage, was funded by NNSA to analyze the source and effect of what is being called a "Radiation Dispersal Release," the so called

"dirty bomb." PNNL was selected for this research because it has equipment and scientists with expertise in the effects of radiation on the environment, and recently had been involved in related research. Several non-military laboratories also have been involved in training IAEA inspectors. The Congress also sought when it enacted legislation creating the Department of Homeland Security, the Homeland Security Act, to ensure that the new Department would have access to all the DOE laboratories on the same terms as DOE in order to assist it in the performance of its mission, and both Departments have been working diligently to accomplish this objective. In short, all the DOE laboratories perform important national security work, regardless of whether they are characterized as "military" or "nonmilitary" laboratories.

12. That brings us to the last issue that external regulation potentially presents, a form of cost not addressed in the Report. Any kind of external regulation that requires receiving permission from an outside entity in order to proceed with work by the Department of Energy potentially subordinates important national security work done at the regulated laboratories to the views of the external regulators, whose charge does not require them to give the same kind of weight to that work. We believe that explains in part the decision generally not to require NRC licensing of ERDA's work when the NRC and ERDA were separated by the Energy Reorganization Act of 1974. DOE inherited ERDA's responsibility for this national security work in the Department of Energy Organization Act as well as its responsibility for health and safety regulation at its contractor-managed facilities. We think there was wisdom in the Congress's consistent intuition that health and safety regulation by other governmental entities was unnecessary and might interfere with performance of DOE's national security responsibilities. Absent evidence that DOE is not fulfilling its health and safety responsibilities properly at its science laboratories, we think it imprudent suddenly to depart from Congress's original judgment and now assume that those responsibilities can be transferred with no cost to the national security functions performed at these facilities. At the least, we believe any effort to quantify costs and benefits should seek to quantify these kinds of potential costs as well.

The following are GAO's comments on the Department of Energy's letter dated April 28, 2003. The number associated with each of our comments corresponds to the numbered DOE statement in this enclosure.

GAO Comments

1. We agree that any reductions in safety and health costs under the first three oversight scenarios would at best offset anticipated increases in staffing at NRC and OSHA. However, we disagree that these estimates are questionable. Our estimates were derived directly from survey responses provided to us by DOE and M&O contactor safety and health managers who are in the best position to provide these data. The fourth scenario, which did not rely on survey responses conditioned by DOE's oversight culture, yielded much higher potential reductions in safety and health costs. These savings would go well beyond offsetting increases in NRC and OSHA costs, but only if they are not shifted to other functional areas of the department and its M&O contractors.

2. We agree with the two propositions extracted by DOE from our report that are behind the potential savings of up to $41 million calculated in scenario 4. We believe that these propositions are reinforced by DOE's current policy guidance for developing new science laboratory contracts. This guidance underscores the use of national standards to establish contractor requirements and performance criteria, while minimizing the use of DOE orders and directives as mechanisms for placing administrative and operational requirements on the contractors.

3. We agree that our report did not include any specific examples of "unnecessary" DOE reporting requirements. However, we disagree that there was no analysis to support our claim that these requirements and ad hoc information requests drive the apparent high levels of safety and health staffing. We compared the number of information requests from NASA to its Jet Propulsion Laboratory with those from DOE to its 10 science laboratories. The Jet Propulsion Laboratory had significantly fewer information requests than the DOE laboratories because NASA essentially relies on the information requested by external regulators, and their oversight, as well as the Jet Propulsion Laboratory's self-assessments for safety assurances. If this laboratory's total information demand equaled the information requested of DOE's M&O contractors, one would expect that the number of staff necessary to respond to these requests would be similar. However, the Jet Propulsion Laboratory and the NASA Management Office at this laboratory have far fewer safety and health personnel as a proportion of their workforces than at a comparable DOE science laboratory and its associated field offices.

4. DOE's concern that three entities (DOE, NRC, and OSHA) will each request information under external regulation gets at a root concern expressed by most of the M&O contractors that the department will not fundamentally alter its oversight approach even with the presence of external regulators. Scenario 4 shows that the Jet Propulsion Laboratory is able to respond to the information requests of its external regulators and NASA overseers with 28 percent fewer safety and health personnel than a comparable DOE science laboratory, even after significantly reducing the number of pertinent DOE laboratory personnel (i.e., from 150 to 41) to account for differences in the types of hazards overseen in the respective laboratories. And, as reported by DOE, the Jet Propulsion Laboratory does this while maintaining comparable levels of safety to its Lawrence Berkeley National Laboratory.

5. We agree that DOE can address to some extent the issue of "unnecessary" information requests under existing self-regulation. However, we disagree that shifting to external regulation is "far from the most plausible mechanism through which unnecessary information requests may be eliminated." (See response to comment 6.)

6. We disagree that shifting to external regulation will make it harder rather than easier to eliminate unnecessary information requests. Shifting to external regulation should help clarify what DOE reporting requirements and other information requests are duplicative of the information needs of external regulators. Applying a NASA-type oversight approach will also help uncover those administrative mechanisms to ensure a safe and healthy work environment that are unnecessary given the presence of external regulators.

7. We pointed out in our report that the potential for a 28 percent reduction in safety and health personnel would vary among the laboratories, depending on the circumstances presented. That is, for some laboratories a higher percent reduction in M&O contractor safety and health personnel might be achieved, and for other laboratories a lower percent reduction would be possible. Applying this percentage to reduce safety and health costs across the 10 laboratories is actually more conservative than the 30 percent reduction in costs estimated by DOE's major M&O contractors in one of our previous reports. We were told that this latter estimate is only achievable if DOE relinquishes its oversight to external regulators. It also takes into consideration the Oak Ridge National Laboratory, which would likely have the greatest regulatory presence of NRC under external regulation.

8. We agree that safety and health cost information is based primarily on responses to our data collection instruments. We relied on survey data because DOE does not have budget quality information on safety and health costs. We disagree with DOE that our cost information does not represent decision-quality information; given the steps we took to determine the reasonableness of the data, including

making cost adjustments where necessary based on follow-up conversations with respondents.

9. We agree that it would be difficult to determine how much of the transition costs to bring the laboratories into compliance with NRC and OSHA standards could be attributable to upgrading these laboratories to meet DOE's own standards. DOE stated that there was no basis for assuming that much of the transition costs would be needed to meet the department's own standards and that any such determination could not be verified. DOE also contends that its safety and health standards meet or exceed those of NRC and OSHA, but that it achieves acceptable levels of safety by means other than those that would be imposed under external regulation. We acknowledge that the full cost of transitioning to external regulation cannot be ascertained until the completion of comprehensive compliance audits involving DOE, NRC, and OSHA for the 10 science laboratories. However, based on previously reported information, we believe that some of the transition costs will be associated with complying with DOE's own regulations. DOE even stated in its Implementation Plan for External Regulation of the Non-Defense Science Laboratories that some of the transition costs would be necessary to cover the backlog of preventive facility maintenance that presumably are in noncompliance with its own standards.

10. A review of DOE's Integrated Safety Management System was beyond the scope of our report. We note, however, that officials at the Jet Propulsion Laboratory told us that they also have an established integrated safety management system operating within the context of external regulation. We believe that the reasonable application of regulations to reflect activities and hazards associated with a particular work environment is appropriate and not automatically eliminated with external regulation, as seen at the Jet Propulsion Laboratory. We have also reported that NRC claims it would be flexible in applying its standards to DOE's unique facilities without compromising safety, and OSHA has concluded that any deficiencies identified at the laboratories would be similar to levels found in the private sector and, therefore, manageable.

11. We agree that characterizing the laboratories under the stewardship of DOE's Office of Science as military or nonmilitary does not fully capture the scope of research taking place at them. However, we provided the questioned footnote to clarify for some readers that the science laboratories have been referred to in other ways. For example, the current version of H.R. 6 – The Energy Policy Act of 2003, uses the phrase "nonmilitary energy laboratories." However, because DOE has itself referred to the science laboratories as "nondefense" science laboratories in its implementation plan for external regulation, we have further clarified the footnote by adding "nondefense science" laboratories.

12. We did not perform a cost benefit analysis of shifting to external regulation of the science laboratories in this report, and we still question the need to do so. As we

previously reported, in our view "DOE has sufficient information and has had ample time to move forward on external regulation." At this point, it appears to us that philosophical opposition rather than data limitations is the principal impediment to a shift to external regulation. Besides, while some costs and potential beneficial savings are reasonably quantifiable, others are not. For example, attempting to quantify the cost of any potential decrease in our national security by shifting to external regulation would be as difficult as trying to quantify the benefits of increased public trust in DOE that might be gained by eliminating self-regulation of safety and health functions. As to national security concerns, we would add that we previously reported that officials at comparable foreign defense and nondefense laboratories, all of which accept the presence of external regulators, indicated that they do not share DOE's concern that external regulation poses a threat to their national security. In addition, our present report identifies at least one oversight scenario that might yield significant savings in safety and health costs that could potentially help support additional research to enhance our national security.

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

GAO's Mission

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

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through the Internet. GAO's Web site (www.gao.gov) contains abstracts and full-text files of current reports and testimony and an expanding archive of older products. The Web site features a search engine to help you locate documents using key words and phrases. You can print these documents in their entirety, including charts and other graphics.

Each day, GAO issues a list of newly released reports, testimony, and correspondence. GAO posts this list, known as "Today's Reports," on its Web site daily. The list contains links to the full-text document files. To have GAO e-mail this list to you every afternoon, go to www.gao.gov and select "Subscribe to daily E-mail alert for newly released products" under the GAO Reports heading.

Order by Mail or Phone

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

U.S. General Accounting Office
441 G Street NW, Room LM
Washington, D.C. 20548

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

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm
E-mail: fraudnet@gao.gov
Automated answering system: (800) 424-5454 or (202) 512-7470

Public Affairs

Jeff Nelligan, managing director, NelliganJ@gao.gov (202) 512-4800
U.S. General Accounting Office, 441 G Street NW, Room 7149
Washington, D.C. 20548

PRINTED ON RECYCLED PAPER