



Testimony

Before the Subcommittee on Energy, Committee on
Science, House of Representatives

For Release on Delivery
Expected at 10:00 a.m., EDT,
Thursday, July 25, 2002

DEPARTMENT OF ENERGY

Observations on Externally Regulating Nuclear and Worker Safety in DOE's Science Laboratories

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



Report Documentation Page		
Report Date 00Jul2002	Report Type N/A	Dates Covered (from... to) -
Title and Subtitle DEPARTMENT OF ENERGY: Observations on Externally Regulating Nuclear and Worker Safety in DOE's Science Laboratories	Contract Number	
	Grant Number	
	Program Element Number	
Author(s)	Project Number	
	Task Number	
	Work Unit Number	
Performing Organization Name(s) and Address(es) U.S. General Accounting Office 441 G Street NW, Room LM Washington, D.C. 20548	Performing Organization Report Number GAO-02-974t	
Sponsoring/Monitoring Agency Name(s) and Address(es)	Sponsor/Monitor's Acronym(s)	
	Sponsor/Monitor's Report Number(s)	
Distribution/Availability Statement Approved for public release, distribution unlimited		
Supplementary Notes		
Abstract see report		
Subject Terms		
Report Classification unclassified	Classification of this page unclassified	
Classification of Abstract unclassified	Limitation of Abstract SAR	
Number of Pages 9		

Mr. Chairman and Members of the Subcommittee:

We are pleased to be here today to testify on the status of the Department of Energy's (DOE) plan for external regulation of nuclear and worker safety at its facilities. Unlike other governmental, educational, and private sector research and development facilities in the United States, DOE's science laboratories are not regulated or licensed by external regulators, such as the Nuclear Regulatory Commission (NRC) or the Occupational Safety and Health Administration (OSHA), to help ensure safe operations. Instead, DOE and its predecessor agencies¹ have, since 1946, been granted legislative authority to self-regulate nuclear and worker safety at all of their facilities, including the science laboratories. The merits of using external agencies to oversee safety in DOE facilities have been studied by the department and the Congress for nearly a decade. In 1999, we testified before this Subcommittee that DOE's changing positions and its inability to reach consensus with its likely regulators had left an uncertain future for the external regulation of the department's facilities. In this context, the conference report accompanying the Energy and Water Development Appropriations Act for Fiscal Year 2002 directed DOE to prepare an implementation plan for shifting regulatory responsibilities for nuclear and worker safety at its 10 science laboratories to NRC and OSHA.² DOE submitted its plan in July 2002.³

Our testimony today will cover (1) current stakeholder positions on external regulation, (2) the potential costs and benefits of eliminating DOE self-regulation, and (3) our preliminary assessment of DOE's implementation plan. Our statement is based on our June 2002 report for the House Committee on Appropriations,⁴ and an initial review of DOE's July implementation plan.

In summary, Mr. Chairman, DOE has yet to accept the shift to external regulation of nuclear and worker safety at its facilities. DOE's position

¹DOE's predecessor agencies are the Atomic Energy Commission and Energy Research and Development Administration.

²H.R. Rep. No. 107-258, Oct. 30, 2001, at 109-110.

³ Department of Energy, *Implementation Plan For External Regulation of Non-Defense Science Laboratories*, (July 1, 2002).

⁴U.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).

remains essentially unchanged since the 1999 congressional hearing, when the department decided not to move forward on external regulation until cost uncertainties and implementation issues were resolved. In contrast to DOE's position, both NRC and OSHA continue their prior willingness to take on new responsibilities if they are given adequate resources to do so. In addition, the laboratory contractors that we spoke with—representing most of DOE's science work—were unanimous in their support for external regulation as long as the department reduces its current level of safety oversight once NRC and OSHA assume these responsibilities.

Past regulatory simulations and ongoing work by DOE and its potential regulators indicate that the external regulation of the science laboratories would not require prohibitively expensive facility upgrades to be licensable. Further, much of the expected "costs" would likely involve bringing facilities into compliance with DOE's own safety standards. The likely benefits of external regulation have been widely reported but are less tangible. They include eliminating DOE's inherent conflict of interest in regulating itself, subsequent gains in public trust, and longer term safety gains. In addition, laboratory contractors told us that shifting away from DOE safety regulation could help them improve operational efficiency by reducing their environment, safety, and health (ES&H) staffs.

DOE's response to the conference report directive is not a detailed implementation plan. Rather, it is a restatement of its previously stated call for further cost and benefit analyses before making a final decision on accepting external regulation. The conference report directive did not seek this determination. The DOE response also does not provide other information specifically requested in the directive, including reductions in funding and staffing at the department as a result of external regulation, and changes in statutory language necessary to make the transition to external regulation. Rather, it describes the issues that DOE believes must be addressed in order to consider external regulation at the 10 science laboratories. In our opinion, DOE has sufficient information and has had ample time to move forward with the external regulation of its science laboratories. Since growing evidence suggests that NRC and OSHA have the capability to oversee DOE's science laboratories more effectively and at less cost than DOE's internal staff, moving away from self-regulation could potentially provide the department and its contractors with opportunities to free up staff resources for more science mission work. This would only be true if budgets were held constant; an assumption that is not certain.

Background

DOE initially recognized the need for external safety regulation in 1993, when Secretary Hazel O'Leary announced that the department would seek external regulation for worker safety. In 1994, legislation was proposed and hearings held on externally regulating nuclear safety at DOE facilities. Although no legislation was enacted, DOE responded by creating advisory groups to help formulate its policies and implement plans to eliminate self-regulation of nuclear and worker safety in all of its facilities. To achieve this goal, in 1996, DOE endorsed recommendations to phase out its self-regulation practices over a 10-year period. In late 1997, however, DOE took a more cautious approach when Secretary Federico Peña embarked on a 2-year pilot program to simulate regulation by NRC and OSHA at selected facilities.⁵ Among other themes, these simulations were developed to test regulatory approaches and determine the cost of moving to external regulation. Despite NRC and OSHA conclusions from these pilots that externally regulating DOE's science laboratories was achievable, Secretary Bill Richardson decided not to pursue external regulation, citing cost and other regulatory uncertainties. In this context, we reported in 1998 (and again in congressional testimony in 1999 and 2000) that DOE did not have a clear strategy on external regulation.⁶ In a subsequent overview report on DOE, we recommended eliminating self-regulation, among other necessary actions, to help improve the accountability of the department.⁷

⁵ These facilities included all or part of the Lawrence Berkeley National Laboratory in California, the Oak Ridge National Laboratory in Tennessee, and the Savannah River Site in South Carolina. OSHA participated in the California and Tennessee sites and had previously conducted a pilot program at DOE's Argonne National Laboratory in Illinois.

⁶ U.S. General Accounting Office, *Department of Energy: Clear Strategy on External Regulation Needed for Worker and Nuclear Facility Safety*, [GAO/RCED-98-163](#) (Washington D.C.: May 21, 1998); and U.S. General Accounting Office, *Department of Energy: Uncertain Future for External Regulation of Worker and Nuclear Facility Safety*, [GAO/T-RCED-99-269](#) (Washington D.C.: July 22, 1999).

⁷ 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.: Dec. 21, 2001).

Stakeholder Positions Have Remained Unchanged Since 1999

The positions of DOE and its potential regulators—NRC and OSHA—are essentially unchanged since the 1999 congressional hearing on the results of simulated inspections at several DOE facilities.⁸ As we reported in June 2002, DOE officials told us that (1) the department’s current position on external regulation is “neutral” because the Secretary has insufficient information on which to base a decision, (2) another study is needed to develop data on the costs of moving to and operating under external regulation, and (3) only after this additional study is completed will a decision be made on whether to accept external regulation, followed by more time to prepare an implementation plan.

On the other hand, NRC and OSHA reported to DOE that they are prepared to begin regulating the department’s 10 science laboratories now, given adequate resources to do so. The two safety regulators are familiar with most of the facilities they would regulate and are already regulating parts of DOE where the Congress has given them specific authority. The laboratory contractors that we spoke with—representing most of DOE’s science work—were unanimous in their support for external regulation as long as DOE reduces its current level of nuclear and worker safety oversight once NRC and OSHA assume these responsibilities.

Moving to External Regulation Would Likely Be Cost Effective

Data from past regulatory simulations, and ongoing work by DOE, NRC and OSHA, show that shifting to the external regulation of science laboratories would not be prohibitively expensive and would have many benefits. The cost of upgrading DOE facilities to meet regulator standards is not certain, but may not be significant for a variety of reasons: (1) NRC concluded from its simulations that few, if any, changes to DOE facilities are needed to meet NRC’s licensing requirements; (2) NRC stated that it would be flexible in applying its standards to DOE’s unique facilities without compromising safety; and (3) OSHA concluded from its simulations that DOE deficiencies are similar to levels found in the private-sector. (DOE has already adopted OSHA-like standards at its facilities.) In addition, we believe that much of the cost to upgrade DOE’s facilities would likely be for bringing those facilities into compliance with the department’s own requirements. NRC’s and OSHA’s estimates of

⁸*External Regulation of DOE Facilities: Pilot Project Results, Hearing before the Subcommittee on Energy and Environment of the Committee on Science, House of Representatives, Serial No. 106-29, July 22, 1999.*

personnel costs to regulate the 10 science laboratories are potentially less than DOE's expenditures to regulate itself.

The potential benefits of external regulation have been widely reported. A 1996 DOE task force concluded that externally regulating DOE facilities would improve safety, eliminate the conflict of interest inherent in self-regulation, achieve consistency with current domestic and international safety management practices, and gain credibility and public trust.⁹

Potential cost-saving benefits were also noted. For example, the task force found that seven large contractors regulated by NRC and OSHA employed substantially fewer staff dedicated to ES&H oversight than did DOE facilities. More recently, DOE's major science laboratory contractors told us that they could reduce their ES&H staff by up to 30 percent if DOE relinquished its oversight to external regulators. DOE's largest science contractor, Battelle Memorial Institute,¹⁰ reported that it spends one-half to one-third less (as a percent of total costs) on ES&H in its externally regulated private sector laboratories.¹¹ DOE found similar results in a recent study comparing the management of its Lawrence Berkeley National Laboratory with two other federal agencies that use externally regulated contractors to manage their laboratories—the National Atmospheric and Space Administration's (NASA) Jet Propulsion Laboratory and the National Science Foundation's (NSF) National Center for Atmospheric Research.¹² Contractors operating these laboratories had a smaller ratio of ES&H staff to total workers than did DOE's Berkeley laboratory contractor. In addition, with the presence of external regulators, NASA and NSF were able to rely on far fewer staff to oversee ES&H responsibilities at their laboratories. For example, while there was only 1 ES&H staffer out of 23 NASA site office personnel at its Jet Propulsion Laboratory, there were 5 dedicated ES&H personnel out of 15

⁹Report of Department of Energy Working Group on External Regulation, DOE/US-0001, December 1996, p.1-1.

¹⁰ Battelle Memorial Institute is DOE's management and operating contractor for the Pacific Northwest National Laboratory, and manages Brookhaven National Laboratory (in partnership with the State University of New York at Stonybrook), and for the Oak Ridge National Laboratory (in partnership with the University of Tennessee).

¹¹ Battelle has also concluded that the aggregate hazards associated with the R&D activities at these institutions cannot account for these cost differences.

¹² *DOE Best Practices Pilot Study*, Berkeley Lab, LBNL/PUB-865, February 2002.

at DOE's Berkeley site office.¹³ On average, we found that DOE dedicated about 30 percent of its site office staff to ES&H oversight, not including technical staff at the operations offices and several offices at headquarters.

We found additional support for the benefits of external regulation by looking at comparable government-owned, contractor-operated science laboratories in foreign countries. Government and laboratory officials from Belgium, France, Switzerland, and the United Kingdom told us that external regulation is valuable and necessary to ensure safety and public credibility. None of these countries allow their government agencies to self-regulate nuclear and worker safety in civilian research facilities. Two countries, France and the United Kingdom, also use external regulators to oversee parts of their nuclear defense research and development establishment. The United Kingdom, after transferring its two nuclear defense research facilities to private sector contractors, shifted much of the oversight of the facilities to external safety regulators within a 2-year period. British officials told us that the shift to external regulation not only increased safety and improved public credibility but also allowed workers greater freedom to voice their safety concerns.

DOE's Implementation Plan Is Not Focused on Implementing External Regulation

DOE's implementation plan does not reflect a commitment to external regulation or provide a clear path to achieving it. The plan does not present steps to implement external regulation, but instead calls for more detailed studies and a cost-benefit analysis before the department decides on external regulation.

The conference report directed DOE to prepare an implementation plan to externally regulate nuclear and worker safety at the department's 10 science laboratories. To prepare this plan, the conference report stated that the department should assume that NRC would take over regulatory responsibilities for nuclear safety and OSHA would take over regulatory responsibilities for worker safety at these facilities. In addition, DOE should assume that external regulation would become effective beginning in fiscal year 2004. The plan was to address all details necessary to implement external regulation, including

¹³ We were not able to disaggregate department staff overseeing environmental issues from those involved in safety and health.

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- estimates of additional resources NRC and OSHA would need,
 - estimates of corresponding reductions in funding and staffing at the department,
 - specific facilities or classes of facilities for which external regulation cannot be implemented in a timely manner,
 - necessary changes to existing management and operating contracts, and
 - changes in statutory language necessary to effect the transition to external regulation.

Contrary to the conference report directive, DOE's implementation plan merely restates its intention to reassess the merits of external regulation. The costs and benefits of external regulation have already been studied with favorable results, although the precise costs to comply with regulator standards at the 10 laboratories will not be known until the facilities are licensed and inspected. DOE's plan notes that all 10 science laboratories can make the transition to OSHA regulation within 2 years. Eight of these laboratories report that they can move to NRC regulation within 2 years; the remaining 2 will take up to 4 years to move to NRC regulation. However, rather than using this information to go forward, DOE intends to develop detailed cost and benefit information on two laboratories and then prepare a go/no-go decision for external regulation. Assuming that the benefits outweigh the costs, the plan calls for proceeding in August 2003 to conduct a detailed analysis at the eight remaining laboratories and determine on a laboratory-by-laboratory basis if external regulation is cost beneficial. So, rather than presenting a path forward to implementation, DOE's strategy is to study more before deciding on external regulation.

The plan did respond in part to other information in the conference report directive. For example, the plan addressed the first requirement by providing information developed by NRC and OSHA on costs and their additional staffing needs. However, DOE's plan did not provide the statutory language that would be required for moving to external regulation. Rather, it listed the issues where changes to the statutory language are needed, and gave September 2002 as the date to begin this work, with no completion date provided.

In our view, DOE has sufficient information and has had ample time to move forward on external regulation. Support for this decision comes

from years of DOE-NRC interactions in many departmental areas, as well as simulations conducted by NRC and OSHA in the 1990s, and more recent laboratory reviews by the department's task force.

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In conclusion, Mr. Chairman, shifting to external regulation eliminates DOE's inherent conflict of interest and should allow DOE and its contractors to redirect ES&H resources to other science mission priorities. In our view, the issue is not "should" DOE shift to external regulation of its science laboratories, but "how." Any further DOE analysis should detail the steps and timetable necessary to fully implement external regulation as required in the conference report.

Mr. Chairman, this completes my prepared statement. I would be happy to respond to any questions you or other Members of the Committee or Subcommittee may have at this time.

Contacts and Acknowledgements

For future contacts regarding this testimony, please contact (Ms.) Gary Jones at (202) 512-3464. Individuals making key contributions to this testimony included Gary R. Boss, Charles T. Egan, Thomas J. Laetz, and Michael S. Sagalow.