

**GAO**

**Testimony**

Before the Subcommittee on Oversight and Investigations,  
Committee on Commerce, House of Representatives

For Release  
on Delivery  
Expected at  
10:00 a.m. EDT  
Tuesday  
June 29, 1999

**NUCLEAR SAFETY**

**Department of Energy  
Should Strengthen Its  
Enforcement Program**

Statement of Ms. Gary L. Jones, Associate Director,  
Energy, Resources, and Science Issues,  
Resources, Community, and Economic  
Development Division



**G A O**

Accountability \* Integrity \* Reliability

---

Mr. Chairman and Members of the Subcommittee:

We are here today to discuss the Department of Energy's (DOE) efforts to hold its contractors accountable for nuclear safety requirements. DOE has a widespread complex of research and nuclear facilities that contain large quantities of nuclear materials. Some of the materials are in a deteriorated condition, not properly packaged for storage, and may pose a significant risk to workers, the public, and the environment. With few exceptions, DOE's facilities are not inspected or licensed by independent regulators to help ensure that operations are safe. Instead, since 1946, DOE and the agencies that preceded it have relied on their own staff to ensure the safety of these facilities.

Most of the work at DOE facilities is carried out by organizations under contract to DOE. Because of the risks and the potential liabilities inherent with handling nuclear materials, the law authorizes DOE to indemnify, or agree to pay damages for, those contractors that could have an accident associated with handling nuclear materials, and whose actions could cause damage. In 1988, the Congress enacted legislation permitting DOE to hold its contractors accountable for meeting its nuclear safety requirements through a system of civil monetary penalties. DOE determined that to be able to assess civil penalties, existing safety requirements would have to be reissued as enforceable rules. The legislation also named seven contractors at research laboratories, that along with their subcontractors and suppliers, were exempt from having to pay the penalties. In addition, the legislation gave the Secretary of Energy the authority to exempt from paying penalties other nonprofit educational institutions under contract to DOE.

On the basis of the report we prepared for the Committee and are releasing today,<sup>1</sup> our testimony will address (1) what enforceable nuclear safety rules DOE has issued; (2) which DOE facilities and contractors are covered by these rules; (3) how DOE has enforced the nuclear safety rules; and (4) whether there is a continued need for exempting certain contractors from paying penalties for violating nuclear safety rules.

In summary, we found the following:

- Since 1988, DOE has issued enforceable rules covering only 2 of 11 safety areas originally proposed—radiation protection for workers and quality

---

<sup>1</sup>Department of Energy: DOE's Nuclear Safety Enforcement Program Should Be Strengthened (GAO/RCED-99-146, Jun. 10, 1999).

---

assurance issues that define how work is planned and carried out. The other nine safety areas not included in the rules, such as training and certification of employees performing vital operations, are still covered in DOE orders, and DOE generally includes compliance with them as part of its contracts. However, not elevating safety orders to the status of enforceable rules has limited the overall effectiveness of the enforcement program because DOE has fewer options to ensure that contractors are meeting safety requirements and correcting any deficiencies.

- Nuclear safety rules are to be enforced at any DOE facility with the potential to cause radiological harm to the public, workers, or the environment. Although no problems have been identified with the application of the radiation protection for workers rule to the activities of DOE's contractors, DOE field offices have been inconsistent in the degree to which they have placed nuclear facilities under the quality assurance rule. Not properly categorizing DOE facilities as subject to the rules could potentially affect the type of safety oversight carried out by contractors, as well as the enforcement activity undertaken by DOE.
- DOE began its enforcement program in 1996 and concentrates its investigations and enforcement actions on those violations of nuclear safety rules that are the most significant. Between 1996 and 1998, DOE has taken 33 enforcement actions and assessed more than \$1.8 million in penalties. Violations have included such things as unnecessarily exposing workers to radioactivity and not following procedures intended to prevent an uncontrolled nuclear reaction from occurring. DOE has concluded that the enforcement program is a valuable tool for increasing the emphasis on nuclear safety.
- Although DOE recommended in March 1999 that the statutory exemption from paying penalties be continued and expanded to include all nonprofit contractors, subcontractors, and suppliers, the exemption may no longer be needed. DOE cited three reasons for continuing the exemption—nonprofit contractors' unwillingness to put their assets at risk if required to pay civil penalties, effectiveness of existing contract mechanisms in obtaining compliance, and consistency with other regulatory agencies' treatment of nonprofit organizations. However, nonprofit contractors now have contract-related fees available that could be used to pay penalties, contract mechanisms have not been effectively used to address safety-related problems, and, in contrast to DOE, other regulatory agencies collect penalties and administrative costs from nonprofit organizations.

Mr. Chairman, our work clearly shows that, although DOE is ultimately responsible for ensuring nuclear safety at its facilities, the Department has

---

not been aggressive in issuing nuclear safety rules or in holding contractors accountable for complying with the quality assurance rule. The enforcement program is an important complement to existing contract-related mechanisms for ensuring that contractors have safe nuclear practices. Therefore, in the report we are releasing today, we are recommending that the Secretary of Energy take steps to strengthen DOE's nuclear safety enforcement program, and we are suggesting that the Congress consider eliminating the statutory and administrative exemptions—that currently apply to certain nonprofit contractors—so that those contractors would be required to pay the civil penalties assessed for violating nuclear safety rules.

Mr. Chairman, now I would like to discuss our findings in greater detail.

---

## DOE Issued Fewer Nuclear Safety Rules Than Initially Planned

DOE's progress in its efforts to re-issue existing nuclear safety requirements as enforceable rules has fallen far short of its original goal of converting all requirements into rules. Although DOE issued proposed rules covering a broad range of safety issues, only two areas of safety requirements have been addressed with completed rules. DOE largely suspended work on the nine remaining proposed rules because of work on other safety issues and internal discussions about how best to ensure nuclear safety.

DOE issued several proposed safety rules beginning in December 1991.<sup>2</sup> These proposed rules included existing DOE orders on such matters as protecting workers from exposure to radiation, issuing safety analysis reports, reporting defective items and services, and reporting safety-related problems. In March 1993, DOE issued one more proposed rule dealing with the protection of the public and the environment from radiation. After a public comment and review process, DOE issued two of the rules as final—the rule on radiation protection of occupational workers in December 1993 and the rule on quality assurance requirements in April 1994. The remaining rules have not been finalized.

DOE received extensive comments from contractors and other interested parties on the remaining nine safety requirements proposed as rules. DOE's plan was to issue these remaining rules as final after it completed the analysis of the comments received. However, DOE has issued none of the remaining rules as final. DOE officials said two major factors contributed to

---

<sup>2</sup>These proposed rules also included a procedural rule setting up the process that DOE would use to investigate potential violations of nuclear safety rules, issue notices of violation to the contractor, and assess penalties based on the severity level of the violation. After receiving comments and making revisions, DOE issued this procedural rule as a final rule in August 1993.

---

the delay—work on other safety issues and discussions within DOE on how best to proceed with safety regulation.

Although the Secretary concluded in a recent report to the Congress that the enforceable rules have been beneficial in improving contractors' safety performance,<sup>3</sup> the system of enforceable nuclear safety rules originally envisioned by DOE has not been fully realized. DOE's inaction in converting the many other aspects of nuclear safety into final published rules has limited the overall effectiveness of the enforcement program. Although DOE officials have said that there is a renewed effort within DOE to address the need for additional enforceable rules, there is still no definite schedule for finalizing the remaining proposed rules.

In our report, we recommended that the Secretary of Energy expeditiously complete the process of issuing enforceable rules covering important nuclear safety requirements. In commenting on a draft of our report, DOE agreed that it needed to complete this process and outlined its strategy for doing so.

---

## Clarification Needed About Facilities to Which the Rules Apply

Penalties for violating enforceable nuclear safety rules apply to any contractor, subcontractor, or supplier that has been indemnified from liability for possible damages caused by working with nuclear materials. However, the two rules issued to date—occupational radiation protection and quality assurance—have somewhat different criteria for determining which facilities should be subject to them, with the occupational radiation protection rule having broader coverage. Under the occupational radiation protection rule, DOE facilities are subject to its provisions if the activities conducted there have the potential to result in the occupational exposure of an individual to radiation or radioactive material. The quality assurance rule adds a second test—a facility must be defined as “nuclear.” To be a nuclear facility, a facility must have either a nuclear reactor or activities or operations that involve radioactive and/or fissionable materials in such a form and quantity that a nuclear hazard potentially exists to employees or the public.

Although there are no apparent problems with the application of the occupational radiation protection rule, the number of facilities DOE field offices decided were subject to the quality assurance rule may be somewhat understated. According to the 1998 annual report of DOE's Office

---

<sup>3</sup>Department of Energy Report to Congress on the Price-Anderson Act (Mar. 1999).

---

of Enforcement and Investigation,<sup>4</sup> the office has identified a number of facilities that should have been included but were not. Our review of DOE's approach to identifying nuclear facilities confirmed that there are problems in this area. The nuclear reactors at DOE's Savannah River site in South Carolina and Hanford site in Washington State are an example. Both sites have reactors that produced nuclear weapons material between the 1940s and 1980s. Although none of the reactors are currently operating, radiation exposure remains a potential problem, because, for example, all have reactor blocks or vessels in place that contain residual radioactive material. Nevertheless, Savannah River categorized its reactors as nuclear facilities, while Hanford did not.

DOE does not know how widespread this problem of identifying nuclear facilities is so its significance is difficult to determine. However, incorrectly categorizing facilities could potentially affect the type of safety oversight being done by contractors and DOE field offices, as well as the enforcement activity undertaken by the Office of Enforcement and Investigation.

In our report we recommended that the Secretary of Energy ensure that field locations are properly following DOE's guidance in determining which facilities must comply with the nuclear safety rule on quality assurance. In commenting on a draft of our report, DOE agreed that the scope of the quality assurance rule should be clarified and described the steps it has taken and will take to do so.

---

## **DOE's Enforcement of Nuclear Safety Rules Has Resulted in Penalties Against Contractors**

DOE established the enforcement program in 1996, which relies primarily on a system of self-reporting and corrective actions by its contractors, and concentrates its enforcement actions on those violations of nuclear safety rules that are the most significant, and to situations where the contractor has not promptly identified, reported, and corrected the problem. DOE's enforcement process includes (1) identifying, evaluating, and investigating potential violations of the nuclear safety rules, (2) determining the severity

---

<sup>4</sup>1998 Annual Report, Price-Anderson Nuclear Safety Enforcement Program (Jan. 1999).

level of the violation,<sup>5</sup> (3) calculating the civil penalty,<sup>6</sup> and (4) notifying the contractors and public of the results of the enforcement action. As our report states, between 1996 and 1998, DOE took 33 enforcement actions with assessed penalties totaling \$1.8 million, with the highest penalty assessed—\$165,000—in November 1998. There have been only two severity level I violations—one against EG&G Inc., at DOE's Mound, Ohio, site for deficiencies in its radiation dosage monitoring program, and the other against the University of California at Lawrence Livermore National Laboratory in California for exposing workers to unnecessary levels of radiation. So far in 1999, DOE has taken four enforcement actions with penalties totaling \$357,500. These included a preliminary notice of violation in May 1999 with an assessed penalty of \$330,000, the largest to date in the program, against Fluor Daniel Hanford, Inc., for repeated violations of the quality assurance rule at its spent nuclear fuels project.<sup>7</sup>

In its March 1999 report to the Congress on the Price-Anderson Act,<sup>8</sup> DOE stated that its authority to impose civil penalties has proven to be a valuable tool for increasing the emphasis on nuclear safety and enhancing the accountability of its contractors. On the basis of our analysis, we agree that DOE's enforcement program appears to be a good mechanism for increasing both contractor awareness of and accountability for nuclear safety requirements and complements existing contract mechanisms. We believe the advantages of the enforcement program include its independence from the program and field office structure, the objectivity of its enforcement process, its emphasis on verifying that corrective action has been taken, and the visibility of its results.

---

<sup>5</sup>The severity levels are: level I, the most significant, are those violations that involve actual or high potential for an adverse impact on the safety of the public or workers at DOE facilities; level II are those violations that show a significant lack of attention or carelessness towards the responsibilities of DOE contractors for the protection of the public or worker safety and that could, if left uncorrected, lead to an adverse impact on public or worker safety; level III are violations that are less serious but of more than minor concern and, if left uncorrected, could lead to a more serious condition.

<sup>6</sup>DOE calculates the civil penalty based on the severity level of the violation, with severity level I penalties set at 100 percent of the base civil penalty (currently \$110,000 per violation per day). DOE may also consider other factors, including how promptly the contractor reported a potential violation and initiated corrective action and whether a pattern of repeated violations exists.

<sup>7</sup>The May 1999 preliminary notice of violation also included DOE's first use of a compliance order in the program, which requires the contractor to complete specific corrective action steps within designated time periods.

<sup>8</sup>In the Price-Anderson Amendments Act of 1988, the Congress required DOE and the Nuclear Regulatory Commission to report by August 1, 1998, on the need for continuing or modifying the provisions of the act.

## Continuing to Exempt Nonprofit Contractors From Paying Civil Penalties May Not Be Warranted

Of the \$1.8 million in civil penalties assessed by DOE from 1996 through 1998, certain nonprofit contractors exempted by statute or under administrative rule did not pay about \$605,000, or 33 percent, of the total penalties assessed. One part of DOE's March 1999 report on the Price-Anderson Act reassessed the merits of the enforcement program and the need to continue exempting nonprofit educational institutions from civil penalties. Although DOE concluded that the authority to impose civil penalties has proven to be a valuable tool for increasing the emphasis on nuclear safety and for enhancing contractors' responsibility and accountability, DOE also concluded that the exemption from having to pay the penalties for nonprofit contractors should be continued. Our analysis of DOE's reasons raises several questions about the merits of continuing the exemption:

- DOE states that the exemption should be continued because major universities and other nonprofit contractors would be unwilling to put their assets at risk for contract-related expenses such as civil penalties. However, under performance-based contracting,<sup>9</sup> for fiscal year 1999, all but one of the contractors, including the nonprofits, that manage and operate DOE facilities have the opportunity to earn a fee.<sup>10</sup> This fee, which is in addition to reimbursed costs, is used by the nonprofit contractors to cover certain non-reimbursable contract costs, and to conduct laboratory-directed research activities. The fee could also be used to pay any civil penalties imposed on the contractor. In addition, in setting the amount of a civil penalty, the Secretary has the authority to consider factors such as the contractor's ability to pay and the effect of the penalty on the contractor's ability to continue to do business. The Secretary could limit the amount of the civil penalty assessed to no more than the amount of the available fee.
- DOE states that contract provisions are a better mechanism than civil penalties for holding nonprofit contractors accountable for safe nuclear practices. Although performance-based contracting can be an effective way to emphasize nuclear safety, DOE has not taken full advantage of this mechanism. For example, at the Lawrence Livermore National Laboratory in California, DOE's main contractor—the University of California—received 96 percent of its \$6.4 million available fee in fiscal year 1998, even though it had significant nuclear safety deficiencies resulting in enforcement

<sup>9</sup>Performance-based contracting, part of DOE's contract reform efforts, links contractors' incentive fees to the satisfactory accomplishment of specific tasks and uses objective measures and criteria to measure contractor performance.

<sup>10</sup>Stanford University has a no-fee contract to operate the Stanford Linear Accelerator Center in California. According to DOE, the contractor wants no fee because a fee would be inconsistent with its role as a university research organization.



---

actions.<sup>11</sup> For fiscal year 1999, it will receive about \$1.1 billion to operate the facility and up to \$6.4 million in fees for meeting or exceeding performance goals, including compliance with health and safety requirements. If the contractor does not perform satisfactorily in the safety and health area, the most this fee could be reduced is \$252,000, according to the agreement with DOE, or only about four percent of the fee.

DOE states that its current approach is consistent with the Nuclear Regulatory Commission's treatment of nonprofit organizations because DOE issues notices of violation to these nonprofit organizations without collecting penalties but can apply financial incentives or disincentives through the contract. However, DOE's approach generally is not consistent with that of the Commission or other regulatory agencies. The Commission can and does impose penalties on any organization it regulates for violating safety requirements without regard to the profit-making status of the organization. In doing so, the Commission sets lower penalty amounts for nonprofit organizations than for the for-profit organizations. Although this option is also available to the Secretary, DOE does not currently take this approach. In addition, both the Commission and other regulatory agencies have assessed and collected penalties or additional administrative costs for violating nuclear safety requirements from organizations that DOE exempts from payment. For example, between 1989 and 1993, the California State Department of Toxic Substances Control assessed and collected \$88,000 in "administrative costs" from the University of California for violating state environmental laws at two DOE national laboratories—Lawrence Livermore and Lawrence Berkeley.

- In our report, we recommended that the Secretary of Energy eliminate the administrative exemption from paying civil penalties for violations of nuclear safety rules that DOE granted to nonprofit educational institutions. In commenting on a draft of our report, DOE said that the issue of exemption from civil penalties is ultimately one for the Congress to decide and that, if the Congress should eliminate the exemption, the Department would assess penalties against the nonprofit organizations in a manner similar to that used by the Nuclear Regulatory Commission.

Thank you, Mr. Chairman and members of the Subcommittee. That concludes my testimony, and I will be happy to respond to any questions you may have.

---

<sup>11</sup>The University of California was assessed \$313,125 in civil penalties in 1998 for severity level I and II violations of nuclear safety rules at the Lawrence Livermore National Laboratory in California. The University of California is statutorily exempt from paying the penalties assessed.

---

## Contact and Acknowledgment

For future contacts regarding this testimony, please contact (Ms.) Gary L. Jones at (202) 512-3841. Individuals making key contributions to this testimony included William R. Swick and Carole J. Blackwell.

---

### Ordering Information

The first copy of each GAO report and testimony is free. Additional copies are \$2 each. Orders should be sent to the following address, accompanied by a check or money order made out to the Superintendent of Documents, when necessary. VISA and MasterCard credit cards are accepted, also. Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

**Orders by mail:**

**U.S. General Accounting Office  
P.O. Box 37050  
Washington, DC 20013**

**or visit:**

**Room 1100  
700 4th St. NW (corner of 4th and G Sts. NW)  
U.S. General Accounting Office  
Washington, DC**

**Orders may also be placed by calling (202) 512-6000  
or by using fax number (202) 512-6061, or TDD (202) 512-2537.**

**Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (202) 512-6000 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.**

**For information on how to access GAO reports on the INTERNET, send an e-mail message with "info" in the body to:**

**info@www.gao.gov**

**or visit GAO's World Wide Web Home Page at:**

**http://www.gao.gov**

**United States  
General Accounting Office  
Washington, D.C. 20548-0001**

**Bulk Rate  
Postage & Fees Paid  
GAO  
Permit No. G100**

**Official Business  
Penalty for Private Use \$300**

**Address Correction Requested**

---