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May 1998

# DEPARTMENT OF ENERGY

## Clear Strategy on External Regulation Needed for Worker and Nuclear Facility Safety



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**Resources, Community, and  
Economic Development Division**

B-279745

May 21, 1998

The Honorable F. James Sensenbrenner, Jr.  
Chairman  
The Honorable George E. Brown, Jr.  
Ranking Minority Member  
Committee on Science  
House of Representatives

With few exceptions, the Department of Energy's (DOE) vast complex of research and nuclear facilities is not inspected or licensed by independent regulators to help ensure safe operations. Instead, since 1946 DOE and its predecessors have relied on their own staff to help ensure the safety of these facilities. We have long criticized DOE for weaknesses in its self-regulation of the environment, safety, and health at its own facilities.

DOE's leadership recognized the need for external safety regulation in 1993, when then-Secretary Hazel O'Leary announced that the Department would seek external regulation for worker safety. In 1994, legislation was proposed to externally regulate nuclear safety at DOE's facilities, and hearings were held. Although no legislation was enacted, DOE responded by creating advisory groups to help formulate its policies and implement plans to eliminate self-regulation in all of its facilities—for both worker safety and nuclear facility safety. DOE is now conducting a pilot program with the Nuclear Regulatory Commission (NRC) and the Occupational Safety and Health Administration (OSHA) to simulate external regulation at selected facilities.<sup>1</sup>

Concerned about the progress being made by DOE and cognizant that the decision to subject DOE to external regulation will need to be made by the Congress, you asked us to

- identify DOE's position on external regulation and
- evaluate DOE's strategy for conducting pilots on external regulation.

As agreed with your offices, we concentrated our attention on issues related to worker safety and nuclear facility safety. We also focused on DOE's laboratories, for which the Department is currently evaluating issues related to external regulation. We did not review activities related to external regulation for environmental hazards—as opposed to

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<sup>1</sup>NRC and OSHA both have safety-related regulatory responsibilities in nuclear and nonnuclear facilities; for simplicity, we refer to worker safety as OSHA-related and nuclear safety as NRC-related.

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safety—because DOE is already regulated by the Environmental Protection Agency (EPA).

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## Results in Brief

DOE's position on the external regulation of safety is unclear. Five years ago, DOE's leadership made a commitment to subject worker safety in its multibillion-dollar nuclear research and defense network to external regulation. To achieve this goal, DOE endorsed recommendations to phase out its self-regulation practices over a 10-year period, starting with legislation by 1998 to authorize external regulation. In late 1997, however, DOE embarked on a 2-year pilot program to simulate regulation by NRC at 6 to 10 of DOE's nuclear sites. At the end of this pilot, DOE and NRC will jointly decide if external regulation by NRC is warranted. DOE's decision to conduct pilots represents a shift from its former strong endorsement to externally regulate all of its facilities. DOE's uncertain position has both NRC and OSHA concerned about the Department's commitment to external regulation.

Although DOE's pilot will provide useful insights, the information collected will not represent the size and the complexity of DOE's vast nuclear complex and thus will not yield the practical data needed to address many critical issues on external regulation. For example, NRC estimates that it could regulate the Lawrence Berkeley National Laboratory in California—the site of DOE's first pilot—for about one-fifth of one staff person per year. This estimate, however, does not represent the cost of regulating the vast majority of DOE's nuclear facilities, nor will much of the information obtained from the other two pilot sites be representative. The three sites in the pilot program contain no nuclear reactors, weapons plants, or heavily contaminated facilities, even though these kinds of facilities were the reason for seeking external regulation in the first place and defense and environmental cleanup sites constitute 80 percent the Department's complex. Moreover, DOE is not integrating OSHA with NRC in its pilots; instead, each regulatory agency is proceeding under a separate strategy without the benefit of collaborating to better understand jurisdictional overlaps.

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## Background

DOE is the only federal agency whose facilities are essentially exempt from regulation by NRC for nuclear safety and by OSHA for worker protection. These exemptions originated from concerns about national security that characterized DOE's historic role in nuclear weapons production. When the Atomic Energy Act was passed in 1946, the federal government, through

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its wartime Manhattan Project, was the primary source of nuclear science. That monopoly was maintained by the U.S. Atomic Energy Commission (AEC), which took over the wartime laboratories and built new ones to develop both nuclear weapons and nuclear power.

Until a 1984 lawsuit, DOE and its predecessors paid little attention to the environmental consequences of their activities, thereby creating a legacy of radioactivity and toxic pollution that will take billions of dollars and decades to remedy.<sup>2</sup> However, under environmental protection statutes, EPA and the states now regulate most aspects of the release, the management, and the cleanup of hazardous and radiological materials at DOE's facilities. The major statutory exceptions are the management of radiological releases to water under the Clean Water Act and certain radiological waste under the Resource Conservation and Recovery Act (RCRA).

Safety at nuclear facilities was also self-regulated by DOE in the name of national security. To address this situation, DOE created an advisory committee on external regulation, which concluded that "criticism of DOE safety has been widespread, during the last decade, as the consequence of the Department's unsuccessful safety and environmental management practices . . . ." The committee found that secrecy had been used as a shield to deflect public scrutiny. In sum, the committee stated that, "Widespread environmental contamination at DOE facilities and the immense costs associated with their cleanup provide clear evidence that self-regulation has failed."<sup>3</sup>

A subsequent DOE task force, which was formed to find ways to implement external regulation, has cited the following benefits of externally regulating DOE's facilities:

- improve safety,
- eliminate the inherent conflict of interest from self-regulation,
- gain consistency with current domestic and international safety management practices, and
- gain credibility and public trust.

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<sup>2</sup>Legal Environmental Assistance Foundation v. Hodel, 586 F. Supp. 1163 (E.D. Tenn. 1984) made DOE subject to the provisions of the Resource Conservation and Recovery Act.

<sup>3</sup>Final Report, Improving Regulation of Safety at DOE Nuclear Facilities, Advisory Committee on External Regulation of Department of Energy Nuclear Safety (Dec. 22, 1995).

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This task force also noted that “external regulation is an essential element of completing the move from DOE’s historic, self-regulated status, which has been variable, costly, and inconsistent, to a stable, efficient, and predictable safety environment.”<sup>4</sup>

The DOE facilities that would be subject to external regulation are substantial. DOE maintains 3,500 nuclear facilities at 34 individual sites in 13 states, covering, in all, more than 85 million square feet of building space. Eighty percent of these facilities are funded by DOE’s defense and environmental management programs. Included in these numbers are DOE’s national laboratories—23 laboratories that have a budget of about \$7.5 billion. DOE’s facilities that are currently self-regulated reflect a complex array of activities, from research reactors, fuel storage, and weapons dismantlement to accelerators and fusion experiments. DOE’s current regulatory scheme for these facilities focuses on the following:

- Nuclear facility safety: To help ensure that facilities are designed, built, and operated so radioactive and hazardous materials are managed safely, DOE regulates nuclear facility safety under its own system of directives. DOE has also promulgated, through notice and comment, several nuclear safety regulations. NRC regulates the safety of a limited number of DOE’s facilities for which it is specifically authorized. For example, it regulates DOE-owned sites in Colorado for uranium mill tailings, certifies DOE-owned plants in Ohio and Kentucky for gaseous diffusion,<sup>5</sup> and will license any future high-level waste repository. Although the Defense Nuclear Facilities Safety Board (DNFSB), an independent group that oversees DOE’s defense facilities, has no regulatory authority, DOE must respond to its recommendations.
- Worker safety: To help ensure the health and safety of workers by requiring proper working conditions and addressing worker safety complaints, DOE regulates worker safety under the Atomic Energy Act (through an exemption in the Occupational Safety and Health Act for federal agencies that exercise statutory authority to regulate occupational health and safety under the Energy Policy Act of 1992). OSHA has specific authority to inspect DOE’s gaseous diffusion plants.
- Environmental protection: To help ensure public health and a sound environment by controlling the releases, the management, and the cleanup of radiological and hazardous materials, EPA and the states regulate environmental protection under a variety of statutes.

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<sup>4</sup>Report of Department of Energy Working Group on External Regulation, DOE (Dec. 1996), p.1-1.

<sup>5</sup>These plants are leased to the United States Enrichment Corporation.

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OSHA and NRC are the most likely external regulators for worker safety and nuclear facility safety. OSHA is responsible for helping to ensure the safety of most American workers, including those in federal agencies, by inspecting their facilities for compliance with its rules and regulations. NRC regulates the safety of federal and private nuclear facilities by licensing and inspecting them and, if warranted, imposing sanctions for noncompliance. Because the responsibilities of these regulators overlap in nuclear facilities, especially with respect to the radiological protection of workers, OSHA and NRC have developed agreements addressing these specific responsibilities where each has a regulatory role.

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## DOE Does Not Have a Clear Position on External Regulation

Although DOE's leadership had frequently stated, over the last 5 years, its intention to have its facilities subject to external regulation by independent agencies in matters of worker safety and nuclear facility safety, DOE's position has changed. In 1996, DOE endorsed recommendations to phase out its self-regulation over a 10-year period and announced it would seek immediate legislation to authorize OSHA and NRC to become its external regulators. In mid-1997, DOE announced that it will instead evaluate the feasibility of external regulation at selected DOE sites over a 2-year trial period. At the conclusion of this trial period, DOE and NRC will "jointly determine" if independent regulation by NRC is needed. For worker safety, DOE has already simulated regulation with OSHA at one site and has another simulation planned. DOE has no plans to conduct more simulations with OSHA, and plans to formally seek OSHA as its external regulator are unclear. As a result, NRC and OSHA officials have raised concerns about DOE's current commitment to external regulation.

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## DOE's Commitment to External Regulation Began in 1993

DOE leadership pledged to seek external regulation in 1993, when then-Secretary O'Leary announced her plans to subject worker safety in DOE's facilities to outside regulation by OSHA. Since then, several key events have influenced DOE's position on external regulation:

- In 1994, legislation was proposed to require all of DOE's new nuclear facilities be licensed by NRC; existing facilities would be regulated on a case-by-case basis as determined by a federal commission.
- In 1995, in response to this proposal, DOE created an advisory committee to make recommendations on the external regulation of nuclear facility safety; the advisory committee's December 1995 report recommended that essentially all aspects of safety at DOE's facilities should be externally

regulated for the same reasons industry and all other federal facilities are.<sup>6</sup>

- In 1996, DOE leadership endorsed the committee's recommendation and established a working group of senior executives to develop an implementation plan. The group recommended that DOE continue its efforts to transfer the authority to regulate worker safety to OSHA and the authority to regulate nuclear facility safety to NRC. The group also recommended phasing these transfers over a 10-year period, with the first milestone—to enact the legislative changes needed—to be met before the end of 1998. The group also recommended that the DNFSB continue oversight of DOE's defense facilities but eventually merge with NRC.<sup>7</sup>
- In 1996, DOE and OSHA conducted a pilot on worker safety issues at DOE's Argonne National Laboratory in Illinois to simulate OSHA's enforcement and to assess practical steps for the transition to external regulation. The independent National Academy of Public Administration (NAPA), which was commissioned by DOE and OSHA to examine regulatory issues (including results from the Argonne pilot), issued a report that recommended legislative and administrative changes to help ensure OSHA's full regulation of all DOE facilities.<sup>8</sup>
- In late 1996, DOE endorsed the working group's report and announced that it would submit legislation on external regulation to "fulfill a commitment made in the [DOE's] strategic plan." DOE did not, however, submit legislation.
- In 1997, NRC endorsed acquiring authority to regulate DOE's nuclear facilities. NRC had been studying the feasibility of assuming responsibility for DOE's nuclear facilities as part of its internal strategic planning initiative. In anticipation of eventually becoming the regulator of DOE, NRC had also been providing advice and technical assistance on a wide variety of DOE's nuclear projects.

## DOE's Decision to Conduct Pilots in Lieu of a Phased Implementation Is a Sharp Departure From Its Policy on External Regulation

Despite its public commitment to seek immediate legislation that would authorize NRC and OSHA to regulate it, DOE has decided to evaluate further whether external regulation is warranted. On November 21, 1997, the Secretary of Energy and the Chairman of the NRC signed an agreement to simulate NRC regulation in a pilot program at 6 to 10 selected DOE sites over

<sup>6</sup>The advisory committee believed that the regulation of the specialized area of nuclear explosive safety and, at least initially, safeguards and security, should remain DOE's function.

<sup>7</sup>Report of Department of Energy Working Group on External Regulation, DOE (Dec. 19, 1996).

<sup>8</sup>Ensuring Worker Safety and Health Across the DOE Complex, report by a Panel of the National Academy of Public Administration for the Occupational Safety and Health Administration and the Department of Energy, Jan. 1997.



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a 2-year period. One major purpose of this pilot is to determine the “value added” by external regulation. According to DOE, the final report on the pilot would be used to determine whether regulation by NRC is warranted.

DOE’s more cautious approach to external regulation is reflected in its 1997 strategic plan, which states that DOE will work with NRC and OSHA during 1998 to “evaluate the costs and benefits of independent external regulation of safety and health.” This initiative contrasts with DOE’s 1994 strategic plan, which included the goal to “commit to seek independent and credible external regulation as soon as possible....” DOE officials explained to us that Secretary Federico Peña’s decision to conduct a pilot in lieu of a phased implementation does not represent a change in DOE’s position on external regulation. Rather, it reflects a “more business-like” approach to external regulation. But DOE’s current pilot program will clearly not meet the 1996 working group’s goal to have legislation authorizing NRC’s regulation in place by the end of 1998.

Uncertainty in DOE’s position on external regulation is affecting interactions with both NRC and OSHA, DOE’s most likely external regulators. While NRC has been actively working with DOE in anticipation that it will be DOE’s nuclear regulator in the future,<sup>9</sup> it has expressed public uncertainty over its future role in at least one important area. Previously, DOE had announced that it would develop legislation to allow NRC to license its planned facility for making mixed-oxide (MOX) fuel, which is part of DOE’s proposal to dispose of surplus plutonium by burning some of it in commercial nuclear reactors. A fuel fabrication facility would be needed to develop the fuel, and DOE had been working closely with NRC on the assumption that the Department would develop legislation for NRC to regulate the facility. (DOE’s proposal for the facility includes NRC as the licensor.) Although DOE had planned to submit its proposal to the Congress by April 1998, to allow NRC to regulate any MOX fuel fabrication facility starting in 1999, the Department’s position has recently changed. It now plans to continue self-regulating until several complex issues related to the facility can be further studied. As a result of this change, NRC’s Chairman publicly commented that NRC is uncertain about its role as a regulator for the planned MOX fuel facility.<sup>10</sup>

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<sup>9</sup>For example, NRC provided us with a list of 16 DOE activities (including ones at privatized DOE facilities) in which it has a role. These roles range from providing advice on a problem reactor at the Brookhaven National Laboratory in New York to potentially licensing the West Valley Demonstration Project in New York.

<sup>10</sup>DOE Briefing on MOX Fuel Fabrication Facility Licensing, NRC Public Meeting, Apr. 3, 1998.

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Despite having collaborated for several years on a proposal to transfer authority for worker safety to OSHA, its officials are also uncertain about its role as a future regulator of DOE. In 1996, OSHA conducted a simulated worker safety inspection of DOE's Argonne National Laboratory in Illinois and found no serious health or safety problems in its 6-month pilot at that laboratory. OSHA has also had specific authority to inspect DOE's gaseous diffusion plants in Kentucky and Ohio, both of which DOE owns but leases to the United States Enrichment Corporation.<sup>11</sup> OSHA has an internal team working with DOE on a plan to eventually transfer authority on worker safety to OSHA. However, in a January 12, 1998, internal memorandum, OSHA staff discussed a meeting held between the Deputy Secretaries of DOE and the Department of Labor (to which OSHA reports) to document DOE's changing position on external regulation. A senior OSHA official noted that DOE had slowed the process by which DOE would transfer authority on worker safety to OSHA and concluded that "DOE may no longer support external regulation." Furthermore, OSHA noted that DOE also desires to conduct more worker safety pilots at selected DOE facilities.

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## DOE's Strategy to Conduct Pilots Is Limited

DOE's pilot program to simulate external regulation at selected facilities will not provide managers with much of the information they will need to make well-informed judgments about the value and practicality of external regulation. The scope of the pilots remains in doubt because no complex or defense facilities have been selected. Also, DOE's pilots have been largely limited to simulating NRC's regulation. Only one additional pilot simulating OSHA's regulation is planned, and no joint pilots have been completed or planned to study the jurisdictional overlap that exists between the two agencies.

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## Nuclear Safety Pilot Sites Are Not Representative of the DOE Complex

The sites that DOE has chosen for its pilots will not provide accurate information on the range of complex issues that characterize DOE's vast nuclear facilities. So far, the sites chosen for the pilot program pose relatively simple and limited problems related to worker safety and nuclear facility safety. The first two pilots under way are at the Lawrence Berkeley National Laboratory in California and the Radiochemical Engineering Development Center, at the site of the Oak Ridge National Laboratory in Tennessee. A third pilot is scheduled for the Receiving Basin for Offsite Fuel at the Savannah River site in South Carolina. The fourth pilot is scheduled for the Pacific Northwest National Laboratory in

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<sup>11</sup>DOE formerly operated and self-regulated these large chemical-processing plants, which enrich uranium to produce fuel for nuclear power plants. Under the Energy Policy Act of 1992, the Congress explicitly charged OSHA and NRC with regulatory authority over these facilities.

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Washington. DOE has not decided the sites for the remaining two to six pilots.

The specific objectives for all of DOE's pilots are to

- determine the “value added” by NRC’s regulatory oversight;
- test regulatory approaches;
- determine the status of DOE’s facilities with respect to meeting NRC’s existing requirements;
- determine the costs to DOE and NRC of converting to NRC’s regulation;
- evaluate alternative regulatory relationships between NRC, DOE, and contractors;
- identify the issues and the potential solutions associated with a transition to NRC’s oversight;
- identify legislative and regulatory changes necessary to provide for NRC’s oversight; and
- evaluate how stakeholders should be involved.

The work plan for each pilot project contains additional specific objectives and defines the scope of that project in detail. Each pilot project will also include participation by NRC, the states, and the contractors who manage and operate the sites for DOE. Public meetings were held before the start of each pilot to allow interested parties to ask questions and raise issues.

While the pilot projects will produce useful information, none of the first three sites contain a nuclear reactor, about which the public usually has significant safety concerns. Nor will DOE be conducting pilots at any of its three largest national laboratories—Lawrence Livermore, Los Alamos, and Sandia, which account for about a third of all laboratory activities and operate significant defense and nondefense nuclear facilities. While DOE officials have told us that future sites for pilot projects will be more complex, there are no plans to involve the largest national laboratories or any nuclear defense facilities. Moreover, by excluding its largest national laboratories in its 2-year pilot program, DOE will lack the practical experience needed when it is required to report to the Congress by July 1, 1999, about how it intends to arrange its oversight, including any recommendations for “new external oversight practices that should be implemented.”<sup>12</sup>

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<sup>12</sup>National Defense Authorization Act for Fiscal Year 1998, sec. 3154 (P.L. 105-85).

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The importance of knowing the expected cost of externally regulating DOE's facilities illustrates the need to choose pilot sites that are more representative of the DOE complex. For example, on the basis of the Lawrence Berkeley pilot, NRC estimated it could regulate that laboratory at a cost of one-fifth of a staff person per year (regulatory oversight would include preparing for inspections, conducting inspections, writing reports, processing license amendments, and preparing paperwork associated with an average of two enforcement actions per year). This estimate, however, is not likely to be representative of what would be expected in the majority of DOE's facilities. In 1995, NRC estimated that it would need 1,100 to 1,600 more staff (and an additional \$150 to \$200 million per year) to regulate DOE. A major goal of the pilot program is to provide insight about costs based on actual experiences.

Pilot sites were selected, in part, because the contractor was willing to participate. For example, officials at the Lawrence Berkeley National Laboratory, which is operated by the University of California, were willing participants because they were very confident that their nuclear facility would be judged favorably during the simulated inspection. Other criteria for selecting pilot sites included similarity to current NRC-licensed facilities, hazard diversity, geographic diversity, and the age and the condition of the facility.

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### Only One Worker Safety Pilot Is Planned With OSHA

Although OSHA and DOE officials have discussed the desirability of pursuing a series of pilots on worker safety, there are no plans for future pilots after the planned effort at the Oak Ridge site.<sup>13</sup> According to OSHA officials, the lack of a budget to conduct pilots limits their willingness to participate—especially since DOE's commitment to external regulation may have changed. They felt that additional pilots made sense only if there was some reasonable expectation that external regulation would be approved in the foreseeable future. OSHA is also planning to give its recommendations for external regulation of DOE worker safety to the Office of Management and Budget in July 1998 as part of its proposed budget for fiscal year 2000.

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### Pilot Projects for Worker Safety and Nuclear Facility Safety Are Not Integrated

Although DOE had previously endorsed OSHA as its external regulator for worker safety, OSHA has had no part in pilot programs with NRC. DOE, NRC, and OSHA officials acknowledge that their overlapping jurisdictions raise many significant issues for protecting workers from radiation. These

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<sup>13</sup>Previously, OSHA had conducted a pilot at the Argonne National Laboratory.

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problems have surfaced at the gaseous diffusion plants, which OSHA and NRC have been regulating for several years. OSHA did not participate in NRC's first pilot at the Lawrence Berkeley National Laboratory and its participation at the second pilot site—the Oak Ridge National Laboratory—is not part of a joint effort. Neither NRC nor OSHA has plans to participate in any joint pilots in the future. OSHA officials have explained that budget limitations have precluded the agency's participation.

Each of the three participating agencies—DOE, NRC, and OSHA—has created a variety of separate internal working groups and steering committees on issues relating to the external regulation of DOE's facilities. Moreover, all three agencies are proceeding on different tracks and timetables toward external regulation, without the benefit of a single structure to integrate all three agencies' positions and strategies. For example, DOE created a small task force of headquarters individuals to coordinate the pilot program and work with NRC to develop reports; a separate working group of DOE program and field office representatives was created to help prepare the assessments for these reports; and finally, a steering committee composed of senior DOE managers and the Office of General Counsel was created to resolve important policy issues. DOE's various pilot projects have been focused largely on working with NRC, and no plans have been made to integrate that work with OSHA.

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## Conclusions

DOE does not have a clear strategy for external regulation. Its decision to conduct pilots at small nuclear facilities is inconsistent with the past position to move forward immediately with external regulation. Simulated regulation is an appropriate implementation step only if pilot sites reflect the range of facilities and activities in the DOE complex, and if the purpose of the pilots is to learn how best to structure a regulatory framework for implementation. While the pilots will yield useful data, it is unclear how this approach will achieve the implementation of external regulation, especially in light of DOE's original plan to have legislation enacted by the end of 1998 and to report to the Congress by 1999 on how the Department plans to conduct external oversight of its national laboratories. In addition, the Department's strategy for making OSHA its regulator for worker safety is unclear. OSHA is not participating with NRC in the pilot program and has, along with NRC in one instance, expressed uncertainty about DOE's commitment to external regulation.

## Recommendations to the Department of Energy

Given DOE's wavering position on external regulation and the limitations in its pilots, we recommend that the Secretary of Energy

- clarify the Department's position on the external regulation of worker safety and nuclear facility safety at DOE's facilities and
- develop a strategy to implement the external regulation of worker safety and nuclear facility safety that is consistent with the Department's position. This strategy should include specific goals, objectives, and milestones and show how the information from the pilot projects, and other techniques, will meet the strategy's goals and objectives.

## Agency Comments

We provided a draft of this report to DOE for review and comment. DOE disagreed with our conclusion that its position on external regulation is unclear. DOE referenced the memorandum of understanding (MOU) it signed with NRC, which states that they have "agreed to pursue NRC regulation of DOE nuclear facilities on a pilot program basis." DOE also stated that it is taking a "deliberate approach" on external regulation, for the purposes of estimating cost savings and resource requirements as well as testing regulatory frameworks. We believe our report accurately supports our conclusion that DOE's position is unclear. DOE's strategy to conduct pilots in lieu of proceeding directly to external regulation is a departure from the policy it had announced in December 1996—that it intended to submit legislation authorizing NRC as its external regulator for nuclear safety. Furthermore, unlike DOE's 1994 strategic plan, the 1997 version no longer contains a goal to seek legislation authorizing external regulation. Moreover, DOE's pilot program is a more cautious approach to external regulation. For example, the MOU contains as its purpose the goal to "support a joint recommendation by DOE and NRC to Congress on whether [emphasis added] NRC be given statutory authority to regulate nuclear safety at DOE nuclear facilities."

Defending its exclusion of defense nuclear facilities in the pilot program, DOE said that its next pilots "would fully explore all issues important to transition to external regulation by NRC." DOE further commented that oversight of these facilities is currently being performed by the Defense Nuclear Facilities Safety Board (DNFSB). Defense nuclear facilities are a significant part of the DOE nuclear complex and would have to be included if DOE desired to "fully explore" all the issues that are relevant to external regulation. The DNFSB has made significant contributions toward improving safety at DOE's defense facilities, but it is not a regulatory body, as it

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neither licenses facilities nor imposes sanctions for noncompliance with DOE's own regulations.

DOE also said that OSHA officials "recognized DOE's commitment to continue the pursuit of external regulation with them." However, our discussions with OSHA officials support our position that the future of OSHA's regulation at DOE's defense nuclear facilities remains unclear. According to the OSHA officials we spoke with, the pilot that OSHA has agreed to conduct at DOE's Oak Ridge site is not a joint effort to determine jurisdictional overlaps with NRC. OSHA's lack of a budget to conduct pilots, together with the view that DOE's position has changed, limits the willingness of OSHA officials to participate in future pilots.

While DOE did not comment on our recommendations, it provided clarifying and technical comments, which we have incorporated as appropriate. Appendix II includes the full text of DOE's comments and our response.

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As arranged with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 15 days after the date of this letter. At that time, we will send copies to the Secretary of Energy; the Chairman, Nuclear Regulatory Commission; the Administrator, Occupational Safety and Health Administration; and the Director, Office of Management and Budget. We will make copies available to other interested parties on request.

Our review was performed from December 1997 through April 1998 in accordance with generally accepted government auditing standards. See appendix I for a description of our scope and methodology.

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If you or your staff have any questions about this report, please call me on (202) 512-3841. Major contributors to this report are listed in appendix III.

A handwritten signature in black ink, appearing to read "Victor S. Rezendes". The signature is fluid and cursive, with the first name "Victor" and last name "Rezendes" clearly distinguishable.

Victor S. Rezendes  
Director, Energy, Resources,  
and Science Issues



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# Scope and Methodology

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To understand the status of the Department of Energy's (DOE) external regulation activities, we examined past reports by various committees and working groups established to examine issues related to external regulation. These included the final report by the Advisory Committee on External Regulation of Department of Energy Nuclear Safety, the Report of the Department of Energy Working Group on External Regulation, and a report by a panel of the National Academy of Public Administration. To improve our understanding of the matters discussed in these reports, we interviewed their authors and the staff involved in each study and also obtained and reviewed the documents and the studies discussed in these reports.

To evaluate DOE's current external regulation strategy, we interviewed DOE, contractor, and laboratory officials at the Lawrence Berkeley National Laboratory, the Stanford Linear Accelerator Center, the Los Alamos National Laboratory, the Sandia National Laboratory, and Lawrence Livermore National Laboratory. At each location, we interviewed both DOE site office officials as well as cognizant field office officials. We also asked staff how they were preparing for external regulation and determined the extent of their own studies on related matters.

We interviewed key officials associated with DOE's external regulation pilot, including members of DOE's Steering Committee, Task Force, and Working Group. We also interviewed officials of the Nuclear Regulatory Commission (NRC) and the Occupational Safety and Health Administration (OSHA). To understand NRC and OSHA experiences at the gaseous diffusion plants, we interviewed officials from the United States Enrichment Corporation. We also participated in a conference, sponsored by the National Academy of Public Administration (NAPA), at which external regulation of safety issues was discussed by officials from federal agencies. We also interviewed officials from the Defense Nuclear Facilities Safety Board.

# Comments From the Department of Energy

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

The page numbers in DOE's letter refer to a draft of this report. We have indicated page number changes only for those comments that we discuss in detail.

See comment 1.

See comment 2.



**Department of Energy**  
Washington, DC 20585

May 1, 1998

Victor S. Rezendes  
Director, Energy, Natural Resources, and Science Issues  
Resources, Community, and Economic Development Division  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Rezendes:

The Department of Energy (DOE) has reviewed your draft report, *DEPARTMENT OF ENERGY: Clear Strategy on External Regulation Needed for Worker and Nuclear Safety*, GAO/RCED-98-163. We disagree strongly with the fundamental finding given in your draft report that "DOE's position on external regulation of safety is unclear." As stated in our Memorandum of Understanding (MOU) with the Nuclear Regulatory Commission (NRC), we "have agreed to pursue NRC regulation of DOE nuclear facilities on a pilot program basis."

Secretary Peña agreed with Chairman Jackson, representing NRC, to conduct a Pilot Program of simulated regulation of six to ten facilities over two years. The objectives of the Pilot Program are clearly defined in an MOU, executed on November 21, 1997. These objectives include estimating the potential cost savings to DOE and resource requirements for NRC, as well as testing alternate regulatory frameworks. Over the last few years, DOE has made significant progress in improving its Safety Management System and implementing performance-based management of its contractors, as required by the Government Performance and Results Act. We are working with NRC staff to explore both existing and potential new regulatory frameworks that can be used to regulate DOE facilities without impeding this recent progress by DOE.

We are taking a deliberate approach in conducting the Pilot Program. Assessment methodology and policy issues are being developed first using facilities that are well managed and similar to those currently regulated by NRC. We are in the process of identifying the next few pilots that would fully explore all issues important to transition to external regulation by NRC.

After consultations with Congressional staff, we have structured the Pilot Program to exclude our Defense Programs facilities and laboratories. Oversight of these facilities is currently being performed by the Defense Nuclear Facilities Safety Board (DNFSB). We are presuming that DNFSB will continue this oversight function, pending Congressional actions responding to the report required by Section 3202 of the National Defense Authorization Act for Fiscal Year 1998 (PL 105-85), November 18, 1997.

The Deputy Secretary of Energy has also met with the Deputy Secretary of Labor to structure a pilot project for simulated regulation of worker protection by the Occupational Safety and Health Administration (OSHA). A commitment has been made by OSHA to conduct such a pilot at the

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**Appendix II**  
**Comments From the Department of Energy**

Oak Ridge site. We are working with NRC and OSHA staff to explore interface issues to the degree practicable.

Our detailed comments are enclosed for your use. If you have any questions, please contact me at 202-586-4693.

Sincerely,



Peter N. Brush  
Acting Assistant Secretary  
Environment, Safety and Health

Enclosure

Enclosure

**Comments on GAO Draft Report, *DEPARTMENT OF ENERGY: Clear Strategy on External Regulation Needed for Worker and Nuclear Safety***

**General Comments**

See comment 3.

1. Throughout the report, discussion of external regulation by the Occupational Safety and Health Administration (OSHA) and the Nuclear Regulatory Commission (NRC) are combined. This makes the discussion confusing because there are instances where the observations made relate only to one agency or the other, not both, yet that cannot be discerned by the reader. See, e.g., specific comment 4 and 16 below. Suggest that discussions regarding external regulation by OSHA and NRC be separated.

See comment 2.

2. The report indicates (based on a January 19, 1998 internal OSHA memorandum) that OSHA is concerned that DOE has changed its position on external regulation by OSHA. The report makes no mention that, since early 1996, OSHA has consistently stated its reservations about assuming regulatory responsibility for DOE without a significant increase in resources. Because of these resource concerns, OSHA has resisted DOE efforts to transfer regulatory authority for upwards of 60 small "privatized" facilities, where private employers perform non-DOE work and DOE no longer has clear Atomic Energy Act authority to self-regulate. Moreover, in a March 12, 1998 letter to DOE accepting an invitation to participate in a regulatory pilot at Oak Ridge, Tennessee, OSHA formally recognized DOE's commitment to continue the pursuit of external regulation with them.

See comment 4.

3. In terms of studying the jurisdictional overlap, the GAO study fails to accredit the considerable analysis conducted by the NAPA assessment (co-sponsored by DOE) which evaluated first-hand the implications of this overlap at the gaseous diffusion plants. This issue was treated in detail in the NAPA report with recommendations on how it could be addressed. As indicated above, we have also brought NRC and OSHA together for the Oak Ridge pilot in order to revisit the same issues. DOE has been facilitating OSHA and NRC activities to identify and resolve potential regulatory interface issues and overlaps (See DOE Letter, February 18, 1998 and OSHA Letter, March 12, 1998) during the NRC and OSHA pilots at Oak Ridge.

**Specific Comments**

See comment 3.

1. **Page 2, second paragraph, third and fifth sentences.** The MOU and work plans do not limit the pilot program to "small nuclear sites" or "small-scale pilots." These terms should be deleted.

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Now on p. 2.  
See comment 1.

**2. Page 3, first full sentence on the page.** The sentence states “DOE’s uncertain position has both NRC and OSHA concerned . . . .” DOE’s position is not uncertain. As stated in our Memorandum of Understanding with the NRC, we have agreed to pursue NRC regulation of DOE nuclear facilities on a pilot program basis. As stated in general comment no. 2, DOE’s position regarding OSHA is also clear. We are continuing our pursuit of external regulation by OSHA.

See comment 5.

**3. Page 3, second paragraph, fourth sentence.** Delete or substantially rewrite, the sentence that begins “The three sites. . . .” The DOE has not included defense programs facilities in the pilot program in response to oral requests from staff of various Congressional Committees. We are in the process of selecting additional pilots, and agree that these should be of an increasing challenging nature. The only reactors operating in the Department are non-defense test and research reactors which are the responsibility of the Office of Nuclear Energy.

See comment 3.

**4. Page 2, last paragraph, second sentence.** This sentence states “DOE’s leadership made a commitment 5 years ago to seek legislation that would allow external regulation of safety . . . .” This statement is misleading. On December 20, 1996, Secretary O’Leary made an announcement that the Department would submit legislation to transfer oversight of nuclear safety to NRC, but she made no specific commitment as to timing. She indicated support for a phased effort comparable to the pilot program now underway. In 1993, Secretary O’Leary announced her plans to subject worker safety in DOE facilities to outside regulation by OSHA. This would not require submission of legislation.

See comment 3.

**5. Page 3, last full sentence.** The draft report errs in suggesting that, when the Atomic Energy Act (AEA) was passed in 1946, the federal government was the only source of nuclear science. The U.S. government relied heavily on well established expertise developed at universities such as Berkeley and MIT.

Now on p. 2.  
See comment 1.

**6. Page 3, First full paragraph, first sentence.** The sentence states “Although DOE’s pilot will provide useful insights, the information collected will not represent the size and complexity of DOE’s vast nuclear complex and thus will not yield the practical data needed to address many critical issues on external regulation.” We are taking a deliberate approach in the conduct of the Pilot Program. Assessment methodology and policy issues are being developed first using facilities that are well managed and similar to those currently regulated by NRC. We are in the process of identifying the next few pilots that would fully explore all issues important to transition of external regulation by NRC.

See comment 3.

**7. Page 4, first paragraph.** In a 1984 lawsuit called LEAF v. Hodel, DOE was found to be subject to provisions of the Resource Conservation and Recovery Act (RCRA). Since that time, DOE has embarked on an ambitious effort to comply with the environmental regulations and work with our regulators, the EPA and State environmental agencies. The first sentence in this paragraph needs to be rewritten to reflect these facts.

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See comment 3.

**8. Page 6, first bullet, first sentence.** The first sentence in this bullet makes reference to DOE's regulation of nuclear facility safety under its own system of directives. This sentence leaves out the fact that the Department has also promulgated through notice and comment rulemaking the following nuclear safety regulations: 10 CFR 835, 10 CFR 830.120 and 10 CFR 820.

See comment 3.

**9. Page 6, second bullet.** The last line of the Worker safety paragraph on page 6 should be changed to reflect that, under the Energy Policy Act of 1992, OSHA was given the authority to inspect the gaseous diffusion plants leased by the United States Enrichment Corporation (USEC). Also on page 11, last paragraph, change to read "OSHA has also had specific authority to inspect USEC's gaseous diffusion plants in Kentucky and Ohio, both of which USEC leases from DOE." for the same reason.

See comment 3.

**10. Page 8, first bullet.** The 1994 legislation would have required that all new DOE nuclear facilities be licensed by the NRC.

See comment 3.

**11. Page 8, second and third bullets.** In 1995, the Department created the Advisory Committee on External Regulation of Department of Energy Nuclear Safety. All references to a task force in these bullets should be changed to "an Advisory Committee."

See comment 3.

**12. Page 8, second bullet.** The Advisory Committee was not solely made up of outside experts. Two members of the committee were DOE employees. The committee was made up of members from the public, Federal, State, Tribal, industrial and academic sectors.

See comment 6.

**13. Page 8, third bullet, first sentence.** This sentence indicated that the DOE working group created in 1996 recommended that OSHA regulate worker safety. This is incorrect. The DOE working group did not recommend that OSHA regulate worker safety. It was the National Academy of Public Administration (NAPA) that made the recommendation. DOE coordinated with NAPA to ensure that the recommendations on external regulation of worker safety resulting from the NAPA study were consistent with decisions on external regulation of nuclear safety.

See comment 3.

**14. Page 9, first full paragraph, last sentence.** Change "to examine the Argonne pilot" to "examine regulatory issues." The NAPA study only used data generated by the pilot; the study was much broader.

See comment 5.

**15. Page 10, first paragraph, first sentence.** For consistency, recommend this sentence read as follows: "Despite the public commitment of then Energy Secretary Hazel O'Leary in late 1996 to seek legislation that would transfer oversight of nuclear safety to NRC, DOE has decided to evaluate external regulation through a pilot program."

See comment 7.

**16. Page 10, second paragraph, last sentence.** This sentence states ". . . DOE's current program will clearly not meet the 1996 working group's goal to have legislation authorizing NRC and OSHA regulation in place by the end of 1998." This sentence is misleading. This sentence should be clarified to state that the 1996 working group's goal was a preliminary one. The Report

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of the DOE Working Group on External Regulation (December 1996) provided a proposed schedule (Figure 6.1) in which legislation would be enacted in "approximately two years." This goal did not apply to OSHA regulation, so the reference, "and OSHA" cited in this sentence should be removed. The Working Group did not make a recommendation regarding OSHA regulation.

See comment 3.

**17. Page 11, fourth sentence.** Sentence states that the Department plans to continue regulating MOX until several complex issues can be studied. The Department's Request for Proposals on the MOX plant states to prospective offerors that the facility will be regulated by NRC. That is the DOE's position.

See comment 3.

**18. Page 11, footnote 7.** This footnote wrongly mentions Brookhaven and Ft. St. Vrain as examples of where NRC has been actively working with DOE in anticipation that it will be DOE's nuclear regulator. NRC is working at Brookhaven because Congress requested it and Ft. St. Vrain is currently under NRC's regulatory jurisdiction pursuant to section 202(3) of the Energy Reorganization Act.

Now on p. 8.  
See comment 1.

**19. Page 12, Section entitled "DOE's Strategy to Conduct Pilots is Limited", first sentence.** This sentence indicates that the pilot program will not provide managers with information needed to make judgments about the value and practicality of external regulation. We are taking a deliberate approach in the conduct of the Pilot Program. Assessment methodology and policy issues are being developed first using facilities that are well managed and similar to those currently regulated by NRC. We are in the process of identifying the next few pilots that would fully explore all issues important to transition of external regulation by NRC.

See comment 3.

**20. Page 13, Second paragraph, first sentence.** The sentence indicates "a third pilot is a spent-fuel storage facility at the Savannah River site . . . ." This sentence should be more specific. The third pilot is the Receiving Basin for Offsite Fuel (RBOF) which provides for the receipt and interim storage of irradiated spent nuclear fuel elements from off-site test and research reactors--domestic and foreign. The next sentence beginning with "DOE has not decided the sites for the remaining . . . ." The fourth pilot has now been selected. It is the Pacific Northwest National Laboratory.

See comment 3.

**21. Page 14, second paragraph, third sentence.** This sentence states "While DOE officials have told us that future sites . . . there are no plans to involve the national laboratories." Make it clear that this statement refers to Lawrence Livermore, Los Alamos, and Sandia only because of their defense mission. The first pilot, the Lawrence Berkeley National Laboratory and the fourth pilot, the Pacific Northwest National Laboratory are both national laboratories.

See comment 3.

**22. Pages 13, 15, 16, 20:** "Lawrence Berkeley Laboratory" should read "Lawrence Berkeley National Laboratory".



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See comment 3.

**23. Page 15, last paragraph, and page 16, first paragraph.** Reference to Oak Ridge National Laboratory as the site for the OSHA pilot should be changed to "Oak Ridge Reservation" to reflect the larger scope of the pilot, e.g., the East Tennessee Technology Park will also be participating.

See comment 8.

**24. Page 15, first full paragraph, second sentence.** The statement is inaccurate and incomplete. Suggest it read as follows: "For example, officials at the Lawrence Berkeley National Laboratory, which is managed and operated by the University of California, were willing participants because they judged the radiological operations at their laboratory to be similar to those at current NRC or State licensed facilities, and they believed that the laboratory would benefit from a transition to external regulation."

See comment 3.

**25. Page 15, first full paragraph.** This paragraph seems to focus mainly on the fact that Lawrence Berkeley was willing to participate in the pilot program. In selecting pilots, it is helpful if a site is a willing participant. However, in evaluating facilities or sites as possible pilots, DOE assesses the overall value based on a number of criteria, including: (1) geographic diversity, (2) program office diversity, (3) new or existing facility, (4) age/condition/status diversity, (5) hazard diversity, (6) NRC familiarity diversity, (7) schedule/timeline, (8) availability of applicable NRC standards, and (9) representation of facilities/materials to be regulated. This paragraph needs to be rewritten to reflect the criteria DOE uses to select pilots.

See comment 3.

**26. Page 16, first paragraph, last sentence.** Change "neither DOE nor OSHA..." to "neither NRC nor OSHA..." to properly reflect the positions of the agencies in question.

See comment 3.

**27. Page 16, second paragraph, third sentence.** This sentence does not accurately reflect the structure of the DOE staff. Suggest the following re-write: "DOE established a Steering Committee consisting of senior officials from each program office and the Office of General Counsel to resolve important policy issues. The assessments performed by NRC on the pilot facilities will be conducted with the assistance of cognizant DOE program and field office representatives. These individuals make up the working group. As individual pilots are completed, working group members may change. A small core group of headquarters individuals both full and part-time will coordinate the overall pilot program, including working with NRC to draft the pilot project reports. These individuals make up the task force."

The following are GAO's comments on the Department of Energy's letter dated May 1, 1998.

1. We believe our report accurately supports our conclusion that DOE's position on external regulation of worker safety and nuclear facility safety is unclear. As stated in our report, DOE strongly endorsed external regulation by announcing, in December 1996, its intention to submit legislation authorizing NRC as its external regulator for nuclear facility safety—a position supported in DOE's 1994 Strategic Plan. As we discussed in our report, DOE's 1997 Strategic Plan omitted a goal to seek legislation authorizing external regulation. Moreover, DOE's pilot represents a more cautious approach to external regulation. The purpose of the pilot, according to the memorandum of understanding signed by DOE and NRC, effective November 21, 1997, is to “support a joint recommendation by DOE and NRC to Congress on whether [emphasis added] NRC be given statutory authority to regulate nuclear safety at DOE nuclear facilities.” Also, DOE's comment letter acknowledges the shift in its position when it recommended the following language for our report: “Despite the public commitment of then-Energy Secretary Hazel O'Leary in late 1996 to seek legislation that would transfer oversight of nuclear safety to NRC, DOE has decided to evaluate external regulation through a pilot program.” (See DOE's comment number 15.)

In its comments, DOE acknowledges that defense nuclear facilities are excluded from the pilot, yet DOE states that its next pilots “would fully explore all issues important to transition to external regulation by NRC.” As we reported, these facilities are a significant part of DOE's nuclear complex and need to be included if DOE desires to “fully explore” all the issues that are relevant to the external regulation of worker safety and nuclear facility safety.

Regarding the external regulation of defense nuclear facilities, which include some of DOE's largest laboratories (these laboratories also operate substantial nondefense nuclear facilities), we acknowledge that significant contributions have been made by the Defense Nuclear Facilities Safety Board (DNFSB) toward improving the safety at DOE defense facilities. The DNFSB, however, is not a regulatory body. It does not license facilities nor can it impose sanctions for noncompliance with DOE's own regulations.

2. Our discussions with OSHA officials support our position that the future of OSHA regulation at DOE's facilities remains unclear. The pilot that OSHA has agreed to conduct at DOE's Oak Ridge site is not, according to OSHA

officials we spoke with, a joint effort to determine jurisdictional overlaps with the NRC. Also, OSHA's lack of a budget to conduct pilots, together with the view that DOE's position has changed, limits the willingness of OSHA officials to participate in future pilots.

3. We have made changes to the report as appropriate in response to DOE's comments.

4. We agree that the NAPA report discusses jurisdictional overlap issues, but as we discuss in our report, the Oak Ridge pilot will not, according to OSHA officials we interviewed, address jurisdictional overlap issues. Furthermore, the NAPA report referenced by DOE in its comments recommended that DOE initiate action to give OSHA authority over DOE's nuclear defense facilities. We are not aware of any DOE action to implement this recommendation.

5. We believe our wording accurately reflects the conditions discussed.

6. The DOE Working Group stated in its December 19, 1996, report that with respect to worker protection, DOE efforts to transfer authority to OSHA "should continue." (page vi) This more precise wording was added to our report.

7. Then-Secretary of Energy Hazel O'Leary endorsed the Working Group's recommendation, which included the continuation of DOE's efforts to transfer authority to OSHA. We have removed the reference to OSHA's regulation.

8. We believe our wording accurately reflects the conditions discussed. Our information came directly from laboratory officials who are personally involved in the pilot program.

# Major Contributors to This Report

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