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DEPARTMENT OF ENERGY

Uncertain Future for External Regulation of Worker and Nuclear Facility Safety

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Mr. Chairman and Members of the Subcommittee:

We are here today to testify on the status of the Department of Energy's (DOE) progress toward the external regulation of nuclear and worker safety at its facilities. DOE has recently completed a pilot program with the Nuclear Regulatory Commission (NRC) and the Occupational Safety and Health Administration (OSHA) to simulate external regulation at selected facilities.[1] Our testimony today discusses (1) DOE's changing positions on the desirability of external regulation for its facilities, (2) the disagreement between DOE and NRC on the potential costs and value added of external regulation, and (3) the uncertainties for the future of external regulation in DOE. Our testimony is based on our past and ongoing work on external regulation.[2]

In summary, Mr. Chairman, despite the time and effort by DOE, NRC and OSHA to test regulatory approaches and simulate regulation of nuclear and worker safety at three different DOE sites, uncertainty clouds the future of DOE external regulation. DOE's leadership has changed over the years and each of the last three Secretaries has changed the Department's position on external regulation. The current Secretary believes it is no longer a worthwhile pursuit because the costs would likely outweigh the value of external regulation. Today's position sharply contrasts with the DOE's previously held positions supporting external regulation and also conflicts with the Department's own pilot program results as well as the conclusions reached by NRC and OSHA. The results of the pilot program and the extensive practical experience gained with NRC and OSHA show that external regulation improves safety and accountability and is not likely to be prohibitively expensive. NRC also believes the potential costs of externally regulating DOE facilities are much less than DOE projections. While current DOE leadership has decided not to pursue external regulation, the pilot's results, a decade of reports by blue ribbon panels and DOE working groups, and the experience with NRC and OSHA give the Congress valuable information with which to make an informed judgement about the future of external regulation in DOE.

[1]These facilities include 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.

[2]Department of Energy: Clear Strategy on External Regulation Needed for Worker and Nuclear Facility Safety (GAO/RCED-98-163, May 21, 1998).

Background

We, along with others, have reported on DOE's weaknesses in its self-regulation of environment, safety, and health responsibilities at its facilities. With few exceptions, worker and nuclear facility safety has been internally regulated by DOE because of concerns about national security. Essentially, all federal facilities except DOE's are subject to external regulation. In 1993, then-Secretary of Energy Hazel O'Leary announced that the Department would seek external regulation for worker safety. In 1994, legislation was proposed and hearings were held to externally regulate DOE nuclear safety. Although no laws were enacted, in 1995 DOE created an advisory committee, which concluded that secrecy had been used as a shield to deflect public scrutiny. This 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."[3]

In 1996, a subsequent DOE working group concluded that external regulation could improve safety, eliminate the inherent conflict of interest from self-regulation, gain consistency with current domestic and international safety management practices, and improve credibility and public trust. In 1997, then-Secretary Frederico Pena took a more cautious approach by launching a pilot program with NRC and OSHA. The purpose of the pilot was to test regulatory approaches and gain insight about the costs of external regulation based on actual experience. The pilot began in January 1998 and was completed in June 1998. (OSHA completed an earlier pilot at the Argonne National Laboratory in Illinois in 1996.) The pilot was limited to DOE's non-defense sites. DOE's nuclear weapons sites were not part of the pilot, but under an earlier strategy would have been eventually externally regulated.

The facilities that would be subject to external regulation are substantial. DOE maintains 3,500 nuclear facilities at 34 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 figures are DOE's 23 laboratories, whose total annual budget is about $7.5 billion. DOE's facilities are currently self-regulated and cover a complex array of activities from research reactors, fuel storage, and nuclear weapons dismantlement to accelerators and fusion energy experiments.

[3]Improving Regulation of Safety at DOE Nuclear Facilities, Advisory Committee on External Regulation of Department of Energy Nuclear Safety (Dec. 22, 1995).

DOE's Positions on External Regulation Has Changed

In our May 21, 1998, testimony before this Subcommittee, we cited DOE's changing positions on external regulation.[4] At that time, we said that DOE's latest strategy to conduct this pilot was in contrast to its earlier strong commitment to proceed directly to external regulation. At that same hearing, DOE said that it believes there will be clear benefits from external regulation of worker and nuclear safety at its facilities. In a September 11, 1998, letter to us, DOE again reaffirmed its commitment to external regulation and wrote that it would submit legislation for externally regulating single-purpose energy research laboratories as part of its fiscal year 2000 budget process.

DOE's position on external regulation has again changed. In a February 19, 1999, letter to the Chairman, Subcommittee on Energy and Water Development, Senate Committee on Appropriations, Energy Secretary Richardson stated that the Department will not submit legislation for externally regulating its facilities for worker and nuclear facility safety. The Secretary stated that DOE's analysis of the pilot indicated that "many of the potential benefits that we expected to see from external regulation have not been demonstrated, and appear to be outweighed by associated costs and difficulties raised in the pilot projects." The Secretary cited a number of "significant, unresolved issues" including licensing questions, the extent to which old facilities can be upgraded, and costs. As a result, the Secretary wrote that money for external regulation is better spent on other missions.

Secretary Richardson elaborated on his position in a March 31, 1999, letter to the Chairman, Subcommittee on Energy and Water Development, House Committee on Appropriations. This time, the Secretary noted that DOE and NRC failed to reach agreement on the "conclusions and ramifications" of the pilot program. The areas of disagreement cited by the Secretary included the value added by external regulation and the degree to which regulatory flexibility or exemptions should be available for DOE's facilities. The high potential costs and the uncertainties associated with the transition to NRC's regulation were cited as DOE's main concerns. Regarding OSHA's component of the pilot, the Secretary offered no specific position in either of his letters.

[4]Department of Energy: Clear Strategy on External Regulation Needed for Worker and Nuclear Facility Safety (GAO/T-RCED-98-205, May 21, 1998).

Disagreement on Potential Cost of External Regulation

DOE estimates that its costs of transitioning to external regulation by NRC ranges from $7 to $23 million for the three pilot sites, assuming minimal upgrading of facilities would be required.[5] However, DOE also reports that the costs could be substantially higher—as much as $75 million higher at the Lawrence Berkeley Laboratory site—depending on NRC flexibility in enforcing its regulations. Secretary Richardson's position that the cost would outweigh the benefits of external regulation conflicts with the pilot's results and are inconsistent with the growing experience between DOE, NRC and OSHA. NRC concluded from the pilot program that there would be no major retrofitting of facilities needed to meet its requirements at the various project sites, and that it could immediately license Lawrence Berkeley and the Oak Ridge facility. Some changes would be needed before licensing the Savannah River facility, although the NRC found no safety issues requiring prompt corrective action.

DOE and NRC disagreements on the cost of transitioning to external regulation is a major point of controversy between the two agencies. Specifically, DOE estimates one-time transition costs of external regulation would range from $170,000 at Berkeley to between $5.3 million and $12.8 million at the Savannah River facility (transition costs include training and rulemaking, and costs for upgrading facilities where needed). Furthermore, DOE contends that the many uncertainties associated with having NRC regulate its "unique facilities" poses potentially large financial risks that could greatly increase transition costs. DOE is particularly concerned that NRC would not grant waivers on certain regulatory requirements at its facilities. According to DOE, waivers are needed to avoid potentially higher transition costs. NRC disagrees with DOE's position and reports that because few changes to DOE facilities or procedures would be needed under external regulation by NRC, it believes that DOE's cost estimates for making the transition to external regulation are considerably higher than NRC believes is justified. NRC also noted that the cost to DOE of NRC regulating DOE nuclear facilities could be minimized, potentially resulting in a net savings, by reducing the level of DOE oversight to a level consistent with commercial facilities. NRC also reports that it has a demonstrated history of granting waivers and otherwise applying flexibility to its regulatory processes as conditions warrant.

According to our review of DOE's pilot reports and subsequent discussions with laboratory officials who had provided DOE with cost data, DOE's cost estimates appear inflated and misrepresent actual conditions. For

[5]These estimates exclude transition costs for meeting OSHA requirements, which were not calculated for all sites.

example, at the Berkeley site, the major cost uncertainty cited by DOE is $75 million to decontaminate and decommission (D&D) 2 out-of-service accelerators at the laboratory. DOE said these figures were based on a worst-case scenario in which the laboratory would be forced to clean up the old accelerators sooner rather than later under NRC's rules. According to DOE, taking more time for D&D would allow the laboratory to obtain certain cost savings, such as by recycling materials. However, the $75 million estimate is what the laboratory had always planned to spend to D&D the accelerators. Thus, it is doubtful that DOE's estimate even relates to the cost of external regulation. Further, laboratory officials provided us with data that show the cost to D&D the old accelerators is expected to be about half of the $75 million DOE had indicated. The $75 million figure used by DOE came from a 1992 laboratory report which was not updated or corrected for the pilot, even though laboratory staff had provided DOE officials with the most recent data. The reduced costs result from the fact that since 1994, the laboratory has been recycling materials from the accelerators to save money and to recapture the space as quickly as possible for other scientific use. Regardless of the actual costs, NRC advised DOE that it would likely grant a waiver on the D&D of the old accelerators to allow a more cost-effective strategy because the accelerators pose little risk to public safety. DOE officials acknowledged to us that NRC officials had said they would likely grant such a waiver.

Similarly, DOE officials told us that they might be required to install special alarms for detecting radiation leakage at the Radiochemical Engineering Development Center in Oak Ridge if NRC were the regulator, at a cost of about $4 million. NRC officials advised DOE that they would likely grant a waiver for these alarms because the facility is safely operated and properly shielded from radiation exposure. DOE nevertheless included the $4 million figure as a potential transition cost to being externally regulated.

The potential costs associated with NRC's requirements represent worst-case scenarios and assumes NRC would not exercise flexibility in its approach to regulating DOE's unique facilities. Yet NRC cites many examples of its flexibility, such as providing waivers of its requirements when there is no safety consequence. For example, in July 1999, NRC granted the former DOE-owned gaseous diffusion plants a 1-year extension to meet seismic upgrade requirements. Also, NRC recently extended all of its materials licenses from 2 to 5 years in recognition that radioactive materials are becoming more stable and predicable. NRC's report on the pilot notes that there is precedent in NRC policy and practice for resolving many of the issues raised during the pilot program.

DOE's concerns about high potential costs posed by the uncertainties in working with NRC are all the more curious given the extensive interactions and practical experience the two agencies already share. NRC is now licensing, certifying, and reviewing more than 20 of DOE's projects and activities. For example, early this year, NRC granted a license to DOE for operating the TMI-2 Independent Spent Fuel Debris Facility at the Department's Idaho National Engineering and Environmental Laboratory. NRC had previously licensed the Independent Spent Fuel Storage Facilities for the Fort St. Vrain, and is conducting prelicensing consultations with DOE in other areas, including the high-level waste repository at Yucca Mountain, Nevada, and a proposed facility for making mixed-oxide fuel. Additional issues examined during the pilot program, that is decommissioning, potential conflicts of interest, and funding, are being addressed by NRC and DOE in other regulatory and licensing actions. For example, many of these issues were addressed in licensing the TMI-2 Independent Fuel Storage Installation. DOE's report on the pilot references NRC's flexibility but does not highlight this important distinction in the executive summary nor in Secretary Richardson's letters to the Chairman.

In addition to transition costs of external regulation, DOE estimates it will incur annual nuclear safety inspection-related expenses from $2 to $4 million for the three pilot sites. These costs, however, could be reduced by reductions in DOE's current oversight costs for nuclear and worker safety. NRC estimates its transition costs to be about $2 million and inspection expenses to be less than $1 million for the three pilot sites.

The estimated costs of complying with OSHA's regulations raises fewer issues. DOE's own worker safety requirements are often similar to OSHA's, and the pilot's results indicate that DOE's laboratories resemble those found in comparable commercial facilities. OSHA reports that the costs to comply with its inspection findings are generally to correct previously identified workplace hazards. As with the NRC, OSHA has practical experience in DOE facilities. For example, OSHA has had regulatory authority at the gaseous diffusion plants in Paducah, Kentucky, and Piketon, Ohio since 1993. These DOE facilities are leased to the United States Enrichment Corporation. OSHA has also accepted regulatory responsibility for two privatized facilities at DOE's Savannah River site.

NRC officials told us that their concerns with DOE's cost estimates contributed to their decision to prepare a separate report on the pilot's results. Both agencies had agreed in their 1997 memorandum of agreement to prepare a joint report on the pilot's results. OSHA was not part of the

original agreement and was later added to the pilot in response to congressional direction.[6]

Disagreement on the Potential Value Added of External Regulation

The second major area of controversy is the value added by external regulation, about which DOE also disagrees with NRC and OSHA. DOE leadership stated, without providing detail, that many of the potential benefits that were expected from external regulation have not been demonstrated. DOE's reports on the pilot results did not focus on the benefits of external regulation, but rather on the potential costs and other issues. However, NRC and OSHA concluded from the pilots that their presence could improve safety at DOE's facilities. While NRC did not find any significant problems in its visits, the Commission believes its processes improved safety. Recent experience supports this. For example, in February 1999, NRC issued a safety assessment of the Brookhaven National Laboratory High Flux Beam Reactor in which NRC staff "identified no safety-significant issues" but did find "several apparent instances of noncompliance with DOE and [laboratory] requirements." NRC staff noted that "the safety programs at the [reactor] were found to provide adequate protection of the health and safety of the public, the workers, and the environment." The staff also concluded that "the design and conditions at the [reactor] do not present any unique regulatory or technical challenges to regulatory oversight of the [reactor] by outside regulators, such as NRC." Similarly, OSHA's presence as an external regulator would, according to OSHA, generally result in more timely correction of workplace hazards. OSHA did find some problems in its pilot visits and prepared simulated fines for violations: $75,000 in Oak Ridge, and $58,000 in Berkeley. Fifty four of the 75 violations at Oak Ridge were classified as "serious," with 2 requiring immediate corrective action. Fewer hazards were noted at the Berkeley site. OSHA officials told us that their findings parallel those expected at similarly sized facilities in the commercial sector.

An important value added benefit from external regulation is public credibility. As we testified before this subcommittee on July 13, 1999, DOE has resisted independent regulatory oversight of worker and nuclear safety, which has prompted a perception that it lacks accountability.[7] Laboratory officials at the Berkeley and Oak Ridge sites noted the value of gaining credibility from being externally regulated.

[6]Energy and Water Development Appropriations Act, 1999, P.L. 105-245, Section 311, Oct. 7, 1998.

[7]Department of Energy: Need to Address Long-standing Management Weaknesses (GAO/T-RCED-99-255, July 13, 1999).

DOE's Efforts Cloud the Future of External Regulation

DOE's wavering positions and its failure to reach consensus with participating agencies on the results of the pilot projects have caused uncertainty about the future of external regulation at its facilities. After nearly a decade of reports by blue-ribbon panels and internal working groups, a 2-year pilot effort, and extensive practical experience supporting the view that external regulation works, DOE's leadership has reversed course. Given these experiences, we believe that the Congress has an opportunity to make a decision on whether or not a class of DOE's facilities—as represented in the pilot —should be externally regulated for worker safety and nuclear facility safety, a position previously advocated by DOE officials.

Mr. Chairman, this concludes our statement. We would be happy to respond to any questions you or Members of the Subcommittees may have.

Contacts and Acknowledgements

For future contacts regarding this testimony, please call Gary Jones at (202) 512-3841. Individuals making key contributions to this testimony included Gary R. Boss, Michael Gilbert, William Lanouette, and Melissa Francis.

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