

The Regents of the University of California

**COMMITTEE ON OVERSIGHT OF THE  
DEPARTMENT OF ENERGY LABORATORIES**

November 14, 2001

The Committee on Oversight of the Department of Energy Laboratories met on the above date at UCSF–Laurel Heights, San Francisco.

Members present: Regents Atkinson, Davies, S. Johnson, Marcus, Montoya, Moores, Morrison, Preuss, Sayles, and Seymour; Advisory member Terrazas

In attendance: Regents Connerly, T. Davis, Hopkinson, O. Johnson, Kozberg, Lee, and Lozano, Regents-designate Ligot-Gordon and Sainick, Faculty Representatives Binion and Viswanathan, Secretary Trivette, Treasurer Russ, Provost King, Senior Vice Presidents Darling and Mullinix, Vice Presidents Drake, Gomes, and Hershman, Chancellors Berdahl, Bishop, Carnesale, Cicerone, Dynes, Greenwood, Orbach, Tomlinson-Keasey, Vanderhoef, and Yang, and Recording Secretary Bryan

The meeting convened at 8:30 a.m. with Committee Chair Moores presiding.

**1. APPROVAL OF MINUTES OF PREVIOUS MEETING**

Upon motion duly made and seconded, the minutes of the meeting of July 18, 2001 were approved.

**2. STATUS REPORT ON THE DEPARTMENT OF ENERGY LABORATORIES**

President Atkinson introduced Mr. John McTague, noting his distinguished background in academia and industry as a member of the Department of Chemistry at UCLA, science advisor to President Reagan, and senior vice president at the Ford Motor Company, and called upon him to present his first report to the Board since his appointment as Vice President–Laboratory Management.

Vice President McTague reported on the status of the three Department of Energy (DOE) national laboratories managed by the University and discussed some of their challenges and opportunities for the future. He noted that the past few years have been difficult for the laboratories, which grappled with some very high-profile concerns in safety and security and a project management problem that involved a high cost overrun. He reported that while in the past there have been problems particularly in project management, the science and technology at the laboratories have always been of the highest level.

Mr. McTague reported that the two national security laboratories, Los Alamos National Laboratory and Lawrence Livermore National Laboratory, had surveyed their

employees concerning the work environment. The data that was collected showed that most employees considered the most favorable aspect of the laboratories to be the safety of their work environment. The second most highly rated characteristic was the acceptance of ethnic and cultural differences among employees. He believed that the high percentages of satisfaction reported in these two areas were especially significant in a workplace that deals with very sensitive material. The survey showed that 81 percent of employees were proud to be associated with the laboratories and were satisfied with their level of involvement in the decisions that affect their work. Mr. McTague did note one area of significant concern at the Los Alamos laboratory. Employees reported that productivity had decreased during the past year. He believed that the circumstances of the past few years and the resulting expansion of the bureaucracy have affected employees' perception of their ability to do their jobs productively. On a positive note, however, every laboratory experienced only about one-third of the environmental health and safety issues expected in a typical work environment. There were no major security incidents or nuclear facility stand downs during the year.

Mr. McTague reported that the performance of the laboratories as judged by the Department of Energy has improved. Since 1993, overhead costs have dropped by 15 percent, and DOE scores for the laboratories in operations and administration in laboratory management have gone from a marginal 70 percent to an outstanding rating. This year the science and technology performance ratings of the laboratories were at a historic high. For the first time, management activities scores were equivalent to those achieved in science and technology.

Mr. McTague discussed some outstanding science and technology performance items of the past year, which has been perhaps the best that the laboratories have had in that category. One of the most significant things that happened at the two national security laboratories was that for the first time a significantly modified nuclear weapons system was certified at each laboratory without testing. There were also several world bests achieved by the laboratories in the past year. At Livermore National Laboratory the Accelerated Strategic Computing Initiative's Option White supercomputer, capable of 12 trillion operations per second, the world's fastest, has been put on line. The laboratories operate as a computer system; Los Alamos has been using the facility to do full code simulations of nuclear weapons for the first time. Likewise, at Lawrence Berkeley Laboratory a very high-speed supercomputer has been put on line and has in excess of 2,400 users. Also on line is an electron microscope which has the highest resolution of any in the world.

Mr. McTague reported that there has been a remarkable turnaround in the development of the National Ignition Facility, a new laser system that will be 50 times the power of any laser made before. There have been cost overrun problems in the past, but now the project is well on course and on budget.

Mr. McTague recalled that circumstances that arose following the September 11 attack on the World Trade Center vividly demonstrated the importance of the research being done by the laboratories, which for years have had an extensive program in identifying, by advanced molecular biological techniques, strains of materials such as anthrax and plague that could be used in biological warfare. Recently, the laboratories have developed techniques for very rapid response to identifying such materials. He displayed to the Regents a hand-held DNA analyzer developed at the Livermore laboratory that is being commercialized. Prototypes are already in the hands of many federal agencies. The device can analyze a sample on the spot in 20 minutes. He also displayed a small biochip that can do very detailed fingerprint analysis. It is being developed by the laboratory in concert with Afametrics. There has also been substantial work done at the laboratories in infrastructure analysis, in which detailed modeling can predict the susceptibilities to attack or disaster of electric power and road systems. The laboratories have extensive capabilities in detecting and preventing cybersecurity attacks and understanding where the attacks are coming from. These systems are also deployed with several federal agencies.

With regard to future challenges for the laboratories, Mr. McTague emphasized the importance of reversing the decline in productivity perceived to be tied to new non-value-added regulations. He believed it was important to return to performance-based management, wherein DOE specifies what work the laboratories should do, but UC management determines how that work should be carried out. There is significant inefficiency and loss of effectiveness of taxpayer money in the present procedures. Discussions with DOE are ongoing in an attempt to establish more efficient and accountable methods of managing the laboratories.

Regent Davies asked whether President Bush's announcement concerning future reductions in the nuclear stockpile will affect the laboratories' functioning. Mr. McTague stressed that although the planned drop in the number of warheads may be significant, the number of weapons systems will not be decreased, and the laboratories will continue to certify the safety and reliability of weapons systems. In fact, as the systems age, the importance of proper scientific surveillance increases. The laboratories do not do the actual dismantlement of warheads, but their expertise is used in the process.

Regent Preuss observed that the country is in a period of increased awareness about the need to conduct basic research in weapons and defense. He noted that the devices Vice President McTague displayed are available because the laboratories have been preparing for many years to confront dangers that have recently become real. He believed that the laboratories deserve the Regents' support in doing their work and in trying to mitigate the negative effects of myriad regulations not directly related to their mission.

Chairman S. Johnson commented that she had been aware of the laboratories' high scientific capabilities, but she observed that the University as manager has always

been defensive about handling the business aspects of the partnership with DOE. She was gratified to learn that the managerial side has gained in strength.

Regent Montoya noted that the Los Alamos laboratory has become a positive force in its northern New Mexico community. Mr. McTague reported that the laboratory has become involved in a cooperative hospital program, with the San Francisco and San Diego campuses, to address the problems of widespread drug abuse in the community and has established educational outreach programs to prepare local residents for higher education.

President Atkinson agreed that the importance of the DOE national laboratories tends to become clear during times of national crisis. The innovativeness with which they approach problems puts them at the forefront of technology. He noted that to maintain their quality the laboratories depend on recruiting the best minds and that this challenge is met through the continuing relationship between the laboratories and the University which allows for the free exchange of information among faculty, scientists, and students. He believed that it was of paramount importance to keep that environment open.

The meeting adjourned at 9:00 a.m.

Attest:

Secretary