

The Regents of the University of California

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

November 20, 2003

The Committee on Oversight of the Department of Energy Laboratories met on the above date at Covell Commons, Los Angeles campus.

Members present: Regents Blum, Bodine, Davies, Dynes, Marcus, Montoya, Moores, Pattiz, Preuss, and Seigler; Advisory members Ornellas and Blumenthal

In attendance: Regents Bustamante, Connerly, Hopkinson, Huerta, Johnson, Kozberg, Lansing, Murray, and Sayles, Regents-designate Anderson and Novack, Faculty Representative Pitts, Secretary Trivette, General Counsel Holst, Provost King, Senior Vice Presidents Darling and Mullinix, Vice Presidents Broome, Doby, Drake, Foley, Gomes, and Gurtner, Chancellors Berdahl, Bishop, Carnesale, Cicerone, Córdoba, Greenwood, Tomlinson-Keasey, Vanderhoef, and Yang, Acting Chancellor Chandler, Laboratory Director Anastasio, and Recording Secretary Bryan

The meeting convened at 9:48 a.m. with Committee Chair Preuss presiding.

1. APPROVAL OF MINUTES OF PREVIOUS MEETING

Upon motion duly made and seconded, the minutes of the meeting of September 18, 2003 were approved.

2. PROPOSAL TO ESTABLISH A NATIONAL SECURITY LABORATORIES BOARD OF DIRECTORS

The President recommended that the establishment of a National Security Laboratories Board of Directors be approved in principle, with final details to be brought for approval at a future meeting.

It was recalled that the University is committed to effecting immediate and significant improvements in the management performance of Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL) during the contract term with the National Nuclear Security Administration and independent of whether or not the University competes for a subsequent management contract in 2005. The foundation for accomplishing these improvements is the development and implementation of a new Governance Model for establishing and monitoring performance. This Governance Model has three major elements:

- Enhancement of business systems, practices, and procedures, particularly at LANL; greater involvement and responsibility of Office of the President senior managers; recruitment of new personnel in key positions at the Office of the President and the laboratories.
- Establishment of a National Security Laboratories Board of Directors to strengthen the University's oversight of the weapons laboratories.
- Engagement of private sector expertise in critical areas of operational and administrative management.

The Committee was informed that progress on the first element has been impressive since efforts began in December 2002. Results have been presented to The Regents at previous meetings and will continue to be reported at future meetings.

Progress on the third element, private sector assistance, has consisted of extensive analysis and correlation of relevant and available expertise with University and laboratory needs. This effort is also ongoing and will be reported to The Regents at a future meeting.

The second element, establishment of a National Security Laboratories Board of Directors (the Board), requires approval in principle to proceed with the development of such a Board.

Concept for the Board of Directors

The Board will be an element of the Governance Model for the two nuclear weapons laboratories only, LANL and LLNL.

The concept for the Board is as follows:

- The Board will bring a breadth of nationally recognized expertise to bear on the oversight of the weapons laboratories.
- Board membership will consist of a majority of outside members of significant credibility in areas including, but not limited to, defense, operations, business management, and science and technology, and will include from the University the President, Vice President for Laboratory Management, Regent(s), and representation from the Academic Senate.
- The Chairman of the Board will be an external member of national prominence and credibility.
- Members will be appointed by The Regents.

- The Board will report to The Regents through the President and will have significant delegated authorities, such as:
 - o hiring and firing of laboratory directors, with final approval by The Regents;
 - o approval of annual performance appraisals of directors and laboratory senior managers, which currently is the President's responsibility for directors and the directors' responsibilities for senior managers;
 - o approval of annual salaries for directors and laboratory senior managers, which currently is the President's and The Regents' responsibility for salaries above The Regents' threshold, and the directors' responsibilities for all other laboratory managers;
 - o approval of major policies and organizational structures, which currently is the President's responsibility, as delegated to the Vice President for Laboratory Management;
 - o establishment of performance standards, which currently is the President's responsibility, as delegated to the Vice President for Laboratory Management;
 - o monitoring of performance, which currently is the President's responsibility, as delegated to Vice President for Laboratory Management, in concurrence with the President's Council.
- The Board will execute its authorities and hold the University and the laboratories accountable through the University's line management.
- The Board will operate through committees in such areas as mission, science and technology, operations and administration, audit and ethics, and executive performance and compensation. The committees will include experts beyond the members of the Board. Portions of the President's Council will make a transition to these committees.
- The Board is anticipated to meet four to six times a year, with committees meeting more frequently.

Roles and Responsibilities

The following describes various roles and responsibilities:

Committee on Oversight of the Department of Energy Laboratories

- Retain ultimate responsibility and authority for management of the laboratories;
- Approve the prime contract and its modifications;
- Appoint the Board members;
- Act on the Board's and President's recommendations for hiring and firing of laboratory directors;
- Receive regular reports from the Board and the laboratory directors.

President

- Reports to The Regents;
- Is CEO of University line management of the laboratories;
- Is a member of the Board;
- Acts upon the decisions of the Board;

National Security Laboratories Board of Directors

- Has significant delegated authorities as outlined above;
- Holds UC and the laboratories accountable through UC line management;
- Reports to The Regents through the President;

Vice President for Laboratory Management

- Reports to the President;
- Has line oversight responsibility for the laboratories;
- Leads and coordinates Office of the President senior management resources in oversight of the laboratories;
- Is Vice Chairman of the Board;
- Is Action Officer for the Board, provides support to the Board, and recommends and implements the Board's and President's decisions.

Laboratory Directors

- Report to the President through the Vice President for Laboratory Management;
- Are accountable to the Board through the Vice President for Laboratory Management and the President;
- Are CEOs for their laboratories.

Vice President Foley reported that the committees of the Board will examine issues in detail and provide expertise in the nuclear weapons area to a greater or more focused degree than has been possible previously. Approval in principle will allow for the further exploration of the idea of forming the Board. He emphasized that the Board would report to The Regents but that it would have delegated authority for certain activities, including annual performance appraisals of the Directors, compensation for senior laboratory personnel, major policies and organizational structures, performance standards, and monitoring performance, although all decisions regarding these activities would be subject to final approval by The Regents.

Committee Chair Preuss supported the proposal, which he believed would position the University advantageously with regard to any potential contract bid. He emphasized that, although the Board would be active in searching for and recommending the hiring and firing of laboratory directors, any recommendations in that regard would still come to The Regents from the President. The Board of Directors would be relatively powerful, however, with regard to the hands-on management of the laboratories.

Regent Pattiz asked who would choose the directors and what the financial impact would be. Vice President Foley anticipated that the Board members would be compensated, subject to approval by The Regents. The number of Board members would be between 11 and 15. The Chairman of the Board of Directors would solicit members who could provide expertise in specific areas where it is needed, and would submit those nominees for approval by The Regents. Regent Pattiz agreed that it would be a positive move relative to positioning the University to continue its relationship with the government, but he was concerned that the University could be committing substantial resources before there has been a decision as to whether it should be part of the contract bidding process. Committee Chair Preuss agreed, but he believed it was important to be prepared to take the option if that becomes the final decision. President Dynes emphasized that forming the Board by no means presages the decision as to whether the University will compete for the laboratory management contract. He commented that forming the Board would put the University in a stronger position to correct and maintain those parts of the laboratories that need more scrutiny and would ensure that if The Regents chose to enter the competition, the University then would do so from a position of strength.

Regent Bodine agreed that greater laboratory oversight was needed and that the expertise on such a Board would be helpful, but she believed that there were elements of the proposal that seemed to move from delegation to abdication. While the University needs to be able to show that it is taking serious corrective action concerning the management of the laboratories, the University has a fundamental mandate to provide the ultimate oversight. She asked how The Regents' authorities could remain intact while delegating significant authority to the Board of Directors. The compensation involved may be large, considering the Board would meet as

frequently as The Regents. She questioned the wisdom of delegating the authority of setting the Board's salaries.

Regent Montoya asked for clarification of the range of topics that the Board would address and asked if it would include technology transfer. Mr. Foley reported that technology transfer, which is part of the day-to-day considerations of the laboratories, would still be overseen by The Regents. In fact, The Regents would have final approval on everything that would be done. He noted that approval only in principle is sought because the proposal needs to be fleshed out concerning these kinds of issues. He emphasized that it is the management and business practices of the laboratories that need to be strengthened. The examination of how much authority the Board should have and whether its members should be compensated needs to be debated at much greater length.

Regent Hopkinson commented that the approach was necessary and appropriate. She believed, however, that having the Board report to The Regents through the President would delegate responsibility too far away from The Regents. She advocated having the Board report directly to The Regents. She agreed that the salaries could be set by the Board, with the concurrence of the President and DOE, and reported annually to The Regents, but with the proviso that The Regents could reclaim that authority at any time.

Faculty Representative Blumenthal noted that the Academic Senate would have representation on the proposed Board of Directors. He emphasized that it is the faculty who provide the unique qualities which make the University a good laboratory manager. He mentioned that as the year progresses and the Regents consider the issue of whether the University should compete for continuing management of the laboratories, the Academic Senate will be involved in several activities of interest. The Academic Senate expects to work with Vice President Foley to provide input into the kinds of things that must be determined before a final decision is made to compete. Also, the Academic Senate intends to provide information to the faculty on issues with regard to requests for proposals and other questions regarding University management of the laboratories. It will also be encouraging the campuses to organize town hall meetings and forums that include participation by faculty with a diverse set of viewpoints with regard to laboratory management, hoping that there will be active discussion on the campuses. He noted that Regents may want to participate in those discussions. Finally, the Academic Senate anticipates taking a vote of the entire UC faculty on the issue of competing for the management contract. The vote will differ from previous contract renewal votes in that it will be done electronically, in the hope that there will be a higher degree of participation. Electronic voting will also allow questions to be asked that will help identify nuances in faculty opinions about continued laboratory management.

Regent Marcus noted that the proposal is simply to endorse the general concept of establishing a Board of Directors. To him it seemed a logical move, and he

recommended that any compensation for the Board members should be competitive. He was in support of having the proposed Board report through the President.

President Dynes spoke in favor of establishing a board of the nature described. He noted the concerns that had been expressed about the delegation of authority. He emphasized that there would be no intention to move any oversight responsibility away from The Regents. With the qualifications of people that he expected can be recruited, and with several Regents as members of the Board, the University should be able to intercept potential problems. He viewed the proposal as a positive step for the University.

Regent Connerly was comfortable with the proposal. He observed that there is a growing recognition that there is insufficient expertise in many areas, including investments, the laboratories, and the hospitals, for The Regents to provide an appropriate level of oversight. He viewed the establishment of boards of advisors as an excellent idea. He was hopeful that any compensation paid to this Board of Directors could be structured in such a way that the Department of Energy would be willing to consider it part of the cost of managing the operation.

Regent Huerta acknowledged the need for additional expertise, but she believed it would not be appropriate, considering the University's tight budget, to pay the Board members. She was hopeful that the members would be willing to serve voluntarily. She asked whether there were any peace initiatives attached to the University-managed DOE laboratories. President Dynes responded that the University's Institute for Global Conflict and Cooperation was made up of members from several campuses who interact with the laboratories. Committee Chair Preuss noted further that the laboratories use their weapons expertise to be an effective agent in homeland security. Senior Vice President Darling added that the laboratories play a critical international role in monitoring the proliferation of nuclear weapons around the world in order to make it as safe as possible.

Regent Moores supported the proposal. He warned that restricting the University's ability to pay the members of the Board could harm the recruitment effort. He believed that there should be only two Regents on the Board besides President Dynes and that the reporting structure that was being proposed was appropriate.

Regent Blum provided some perspective on the past year regarding the laboratories. He recalled that the previous year there was, at least monthly, an embarrassment of some kind, the University was blind sided time after time, and it became clear that the oversight that the University was providing was insufficient. He complimented President Dynes for moving quickly to correct the problems and for recommending the appointment of Vice President Foley. Regent Blum believed that in his three weeks on the job Vice President Foley had already made a positive impact on laboratory affairs. He noted that the laboratories together do billions of dollars of defense work and that it would be worthwhile to get the best people for the Board of

Directors and pay whatever is necessary. He expressed confidence in President Dynes and Vice President Foley and believed that whatever they were prepared to recommend concerning laboratory oversight would save time and effort for the Regents.

Regent Pattiz supported the establishment of a Board of Directors. He was hopeful that The Regents would decide to compete for the management contract, because he believed that the University was the most qualified manager. He stressed that in no way should The Regents appear to abdicate any responsibility. He noted that other Regental committees have advisory committees with outside members that meet regularly with committees of The Regents, a practice he believed should be adopted by this committee and the new Board.

President Dynes reported that he and Vice President Foley had described their proposal to the Department of Energy and that the idea had been received enthusiastically.

Committee Chair Preuss believed that the Regents should give to the President and Vice President the tools to move ahead with building an effective laboratory management structure.

Upon motion duly made and seconded, the Committee approved the President's recommendation and voted to present it to the Board, Regent Bodine voting "no."

3. **REPORT ON LAWRENCE LIVERMORE NATIONAL LABORATORY**

Director Anastasio provided an update on the Lawrence Livermore National Laboratory. He recalled that the laboratory supports national security through science and technology, which it also applies to other important national challenges. The laboratory covers about one square mile, employs 8,300 people, over 90 percent of whom are employees of the University, and has a budget of about \$1.6 billion. A large part of the laboratory's budget reflects its national security mission, which ranges from the stockpile stewardship program, through efforts at nonproliferation, to new missions such as homeland security.

Mr. Anastasio discussed the laboratory's fundamental missions, the science and technology being developed, and how science and technology developed for its core missions can be applied to other purposes. He recalled that the stockpile stewardship program was established in 1995, when the Clinton administration decided to extend the Comprehensive Test Ban Treaty begun by President Bush. The President's decision to sign the treaty was influenced by the development of the stockpile stewardship program, which was established to promote a more robust and complete understanding of the operations of nuclear weapons. The program has been through eight cycles and has proved successful at sustaining the President's confidence in the nuclear weapons stockpile without having to resort to nuclear testing.

Mr. Anastasio reported that the laboratory continues to develop new approaches to delving into the science involved in stockpile certification. Although this year innovative technologies and experimental approaches were developed to test the fundamental behavior of plutonium, both at the Nevada Test Site as well as in the general science community, it had been recognized previously that if the certification program were to be sustained, more advanced fundamental capabilities would need to be put into place. To this end, the laboratory embarked on the National Ignition Facility project. This year, four of the facility's laser beams were tested and put into operation. Not only did they work, but it was verified that they meet the criteria necessary for operation of the full facility. He explained that at the ignition facility the energy emerging from a small communication fiber optic laser is amplified a million million times. To accomplish that takes a building the size of a football stadium and laser beams that, despite being the size of wall panels rather than small dots, must be focused on a target the size of a b.b. The first experiments produced exciting results that were reported at an international conference. The project is moving forward well and is more than 75 percent complete. It is the most capable laser facility in the world, even with only four of its 192 beams operational. The facility will be completed in 2008.

Promising experimental data need to be tied together in order to form the complete knowledge of a complicated system such as a nuclear weapon. Director Anastasio reported that the laboratory has used simulations to help advance its national security mission. The technology developed within the scientific supercomputing industry has benefits in other areas. It has enabled the development of global climate modeling, and it promises breakthroughs in biological sciences in the future. The Lawrence Livermore National Laboratory now has three of the world's top six computers, with the Los Alamos National Laboratory and Lawrence Berkeley Laboratory contributing another two.

Mr. Anastasio discussed specific examples of how the laboratory extends its work beyond national security. He recalled that for the past several decades the DOE laboratories had sought to understand how nuclear weapons would effect biological systems. At the start the focus was on a piece of biology about which much was already known – the cell. From a closer examination of cells, the ability to identify genetic material and DNA evolved. In the late 1980s, the three University-managed laboratories teamed with the Department of Energy to embark upon the Human Genome Project. The project has been of great benefit to the country, but it also spins back into biodefense, because the ability to understand DNA and its sequencing has fostered an understanding of the signatures for pathogens that could be biothreats to the country. DNA has various unique segments, small pieces of which can be picked out and identified as signatures that go with microbial pathogens such as anthrax and plague. This capability rapidly to identify pathogens has proved useful since September 11 and the anthrax attacks and was deployed around the country in fall 2001 and at the Winter Olympics in Salt Lake City. A system for analyzing air samples that was developed by the Livermore and Los Alamos laboratories is now in

place in many cities across the country as part of the biowatch program that was announced by President Bush in his state of the union message last year. Also, the Livermore laboratory has developed a small thermal cycler, a device that allows samples of DNA to be analyzed autonomously, and has licensed the technology to a number of companies that have developed products based upon it. The Bioseek Detector, being developed by Smith Company, is a handheld, battery-operated device with which a first responder to a local event can take samples in the field and detect the presence of pathogens in tens of minutes. The detector is being sold around the country. At the same time, the laboratory has built a small file-cabinet-sized system that can collect air samples automatically, go through the necessary chemistry, process the information in the same box, and then send out signals to remote stations. This system is now employed in Washington, D.C. Further, the same capability to identify toxic signatures has been used to detect hazards such as Newcastle's disease, which this year was infecting poultry flocks in California. Working with UC Davis, the Livermore laboratory developed unique signatures to identify which chickens were infected, thereby saving the lives of thousands that otherwise would have to have been destroyed. Mr. Anastasio commented that these were examples of the broad-ranging effects of the laboratory's work, where the laboratory started with national security, developed science and technology that evolved into the sequencing of the human genome, used this technology to develop unique signatures to help with biodefense, and then applied the technology to human health issues and agriculture.

Mr. Anastasio reported that the highest U.S. civilian award, the President's Medal of Freedom, was bestowed upon Edward Teller this year. The laboratory won many R & D awards, including one for laser peening technology that changes the properties of metal by pushing the atoms together. Its applications include protecting jet engine blades from cracking. Eventually the technology will be used to build stronger, corrosive-resistant, nuclear-waste storage containers. Also, the Livermore laboratory participated with other laboratories in the development of a prototype for the next generation of machine tools to be used by the computer chip industry.

Director Anastasio emphasized that the outstanding people at the laboratory are the source of all its successes. A key challenge will be to sustain the ability to attract and retain them. An environment must be created that will cause them to want to be a part of the laboratory no matter what their background or expertise. While he believed that in the past three years the laboratory had attracted some of the best scientists of the decade, he acknowledged that the best people are needed to handle the operational support functions as well. He reported that the University obtained the auditing firm of Ernst and Young to validate the condition of the laboratory's business and financial systems. Although the resulting reviews revealed state-of-the-art capability in the business, procurement, property, and financial systems, the effort to strengthen overall performance continues. He noted that if legislation were to pass that requires the Department of Energy to put the contracts out to bid for the management of not only the Los Alamos laboratory but also the Livermore and Berkeley laboratories, the ability to manage and attract the best workforce may be hampered. Further, it is

expected that 20 percent of the Livermore laboratory workforce will retire in the next five years. The press to bring in a new generation from which to develop leaders is constrained by the current budget crisis.

Director Anastasio closed his presentation by stating that he looked forward to the next 50 years of the laboratory's existence and believed that, with the University as a partner and with the continued support of the Regents, the laboratory would continue to be a source of strength for the nation.

The meeting adjourned at 10:55 a.m.

Attest:

Secretary