The Regents of the University of California

COMMITTEE ON OVERSIGHT OF THE DEPARTMENT OF ENERGY LABORATORIES
February 18, 1999

A special meeting of the Committee on Oversight of the Department of Energy Laboratories was held on the above date at UCSF - Laurel Heights, San Francisco.

Members present: Regents Atkinson, Davies, Johnson, Miura, Montoya, Nakashima, and Preuss

In attendance: Regents Bagley, Espinoza, Kozberg, Parsky, and Willmon, Regents-designate Taylor and Vining, Faculty Representatives Coleman and Dorr, Secretary Trivette, General Counsel Holst, Treasurer Small, Provost King, Senior Vice President Kennedy, Vice Presidents Darling, Gomes, and Gurtner, Chancellors Berdahl, Bishop, Carnesale, Cicerone, Dynes, Orbach, Vanderhoef, and Yang, Vice Chancellor Simpson representing Chancellor Greenwood, Laboratory Director Shank and Recording Secretary Bryan

The meeting convened at 2:30 p.m. with Committee Chair Preuss presiding.

ANNUAL REPORT OF THE PRESIDENT'S COUNCIL ON THE NATIONAL LABORATORIES

Professor Emeritus Drell, Chairman of the President's Council on the National Laboratories, presented its annual report. He noted that the Council's responsibility was to inform and advise the President on all aspects of the management and performance of the UC-managed Department of Energy (DOE) laboratories. The Council, which was organized in 1992, is composed of 20 members who represent the University faculty, academia, government service, and private industry. Its ex officio members include the Laboratory Directors, leaders of the Academic Council, and members of the President's senior staff.

Mr. Drell reported that each of the three laboratories continues to produce work of very high quality that ranges from excellent to outstanding, the Council's highest accolade. The Council's findings have been reported to the Department of Energy, as required by the University's management contracts.

Mr. Drell noted that the Council has three working panels. The panel on science and technology is responsible for assessing the quality of the science and technology programs. Its analysis is the basis for the Council's assessment of the laboratories' performance in science and technology and is based in large part on external peer review committees that report to the Laboratory Directors regarding the performance of each of the laboratories' individual technical divisions. The Council and the Laboratory Directors believe this review process to be very valuable. A second panel deals with environmental, health, and safety issues. The work of this

panel is critical to the public's acceptance of the continued operation of the laboratories. The third panel, which advises on national security issues, focuses on the Livermore and Los Alamos laboratories.

Mr. Drell highlighted some recent issues. He noted that many of the greatest challenges faced by the laboratories presently are related to bringing strong and consistent management to the large, complex devices they operate. The quality of science has to be tightly coupled to sound business and management skills to ensure that projects succeed and stay within their budgets. The Council reviews laboratory projects continually. He recalled that his last report had mentioned two efforts in need of attention: the Advanced Light Source (ALS) at the Lawrence Berkeley National Laboratory and the Joint Genome Institute, a tri-laboratory effort. He reported that progress has been made on both projects. A national review had raised serious concerns about the ALS. In response, the laboratory put in motion a number of corrective actions, including leadership and organizational changes, and enhanced collaboration with the Berkeley campus. An international workshop was charged with defining a compelling scientific program, and user groups were formed to benchmark facility responsiveness. These actions have resulted in a burgeoning user base that is producing promising scientific advances. The Joint Genome Institute has benefited from the attention of the management of all three laboratories. The institute as a whole and each involved laboratory program have achieved or exceeded their sequencing goals for the human genome for the past year. These goals were attained with an accuracy well above defined community standards. As of October 1998, the Joint Genome Institute ranked third worldwide in gene sequencing output. Even with this progress, however, the project will face a continuing acceleration in its sequencing production in order to meet national goals which call for finishing the complete human genome sequence by the end of 2003. The Council will continue to monitor the institute's progress and its continuing search for an appropriate leadership team.

Mr. Drell reported that the Council is following another large project, the Spallation Neutron Source, which will be built at the Oakridge National Laboratory. Both the Berkeley and Los Alamos laboratories are responsible for significant portions of the project. The central project management recently received from DOE an unfavorable progress review. The Council has encouraged the laboratories to work with DOE to implement strong project management quickly in order to salvage the facility.

Mr. Drell noted that the issue of sound project management is critical in the national security programs at the Livermore and Los Alamos laboratories. There are many large, multi-year projects under way or in the planning process. The stockpile stewardship program encompasses several such projects, including the Accelerated Strategic Computing Initiative, the National Ignition Facility at Livermore, and the Dual-Axis Radiographic Hydrodynamic Test Facility. Each is a critical link in the stewardship program. The computing capabilities that the laboratories are acquiring are putting them at the frontier of the field. New scientific insights into weapons physics have been accomplished using full, high-fidelity, three-dimensional explosion codes and comparing the results with experimental data. This work is necessary to maintain confidence in an enduring stockpile under the slowly progressing arms

reduction treaties without testing. Weapons designers are working with computer scientists to ensure that the output of their work is directly relevant to improving the understanding of the science of nuclear explosions. That understanding is replacing the past experimentation that used underground nuclear explosions. Reaching out to academic computer scientists as collaborators is important. The laboratories recruit aggressively to attract experts in advanced computer science.

Mr. Drell reported that two large construction programs, the National Ignition Facility and the Dual-Axis Radiographic Hydrodynamic Test facility, continue on track toward successful completion. Through its national security panel the Council has also reviewed the crucial programs involving surveillance and diagnostics of the aging stockpile and re-validation of weapons systems that are anticipated to remain in the stockpile. Only with data derived from these programs will the Laboratory Directors be able annually to inform and advise the President of the United States regarding the safety and reliability of the deterrent. This is the third year since he announced his decision to pursue the test ban that the Directors have been able to certify the stockpile to the President. This responsibility relies on the strength and success of the University of California system in attracting and retaining scientists and engineers capable of making such complex determinations and in maintaining an atmosphere free from undue political pressure. Mr. Drell emphasized that in all aspects the national security program is consistent with national policy and the comprehensive test ban treaty.

In closing, Mr. Drell commented on issues on the horizon. He reported that there have been recent news articles about a Congressional study investigating espionage that may have resulted in a compromise in U.S. security in relation both to commercial technologies and to nuclear weapons. As a result of such reports, including some directed at the Livermore and Los Alamos laboratories, the Department of Energy is considering enhancing its anti-espionage measures. He reported that the Laboratory Directors are reviewing the adequacy of their internal procedures and that possible actions that the laboratories will be undertaking in connection with the Department of Energy include increased restrictions on foreign visitors and broader applications of polygraph testing. Both the Laboratory Directors and the Council believe that enhanced counterintelligence measures that might be required will strike the appropriate balance between security concerns and the preservation of the scientific quality and the atmosphere necessary to fulfill the laboratories' national security goals. The Council has expressed its concerns on this issue in a letter to President Atkinson, which he transmitted to the Secretary of Energy. Discussions with senior officials at DOE should be helpful in defining an appropriate balance. The panel and the Council have also advised that the Los Alamos laboratory, as it developed a policy paper to guide discussion among relative parties regarding the current and future role of the laboratory in fabricating replacement weapons components for those being disassembled, carry out the re-manufacturing program under guiding principles that do not interfere with the laboratory's basic nature as a center for research and development.

Mr. Drell reported that work on environmental, health, and safety issues continues at the laboratories, which are striving to implement integrated safety management. Their commitment

is evidenced by a recent stand down of the Neutron Scattering Center, a large user facility at the Los Alamos laboratory. Another example is the recent disclosure by Los Alamos of its discovery of residues from high explosives in a monitoring well located near an old operation. These contaminants, some of which were above EPA drinking water standards, were found at depths of between 700 and 1,100 feet. The effort to characterize and monitor the local groundwater is scheduled to continue to 2005. To date, contaminants have not been found in local drinking water wells. Environmental health and safety issues remain at the forefront at Los Alamos in its efforts to address the special provisions contained in its contract.

Mr. Drell noted that the question of the appropriate use of money referred to as laboratory-directed research and development funds continues to be controversial. This money is derived from a tax on all monies coming into a laboratory and is used to fund competitively- awarded research and development projects at that laboratory. Currently, the use of this money is at the discretion of the Laboratory Director, with some restrictions imposed by DOE, and it is directed toward projects that enhance the laboratory's long-term growth and health. The Council continues to advise strongly against the removal of these funds from the control of and use by the Laboratory Directors.

Mr. Drell provided an update on computer modeling techniques used to develop nuclear weapons that are used at the Livermore laboratory to improve the efficacy of cancer radiation therapy. He reported that the program is progressing toward commercialization.

Committee Vice Chair Montoya commented that the Regents and the nation are grateful for Professor Emeritus Drell's service on the President's Council. Mr. Drell stated that, although at times it may seem awkward, it is important that an institution with the traditions, values, and reputation of the University of California be charged with running the stewardship programs that will make it possible for the country to adhere to a comprehensive test ban. The overall scientific quality of the work in non-national security areas also reflects the high standards of the University.

The meeting adjourned at 3:05 p.m.

Attest:

Secretary