The Regents of the University of California

COMMITTEE ON OVERSIGHT OF THE DEPARTMENT OF ENERGY LABORATORIES
September 16, 2015

The Committee on Oversight of the Department of Energy Laboratories met on the above date at the Student Center, Irvine Campus.

Members present: Regents Davis, Kieffer, Pattiz, Reiss, and Zettel; Ex officio members Lozano, Napolitano and Varner; Advisory member Chalfant

In attendance: Regents Gorman, Gould, Island, Makarechian, Ortiz Oakley, Oved, Pérez, Ruiz, and Sherman, Regents-designate Brody, Ramirez, and Schroeder, Faculty Representative Hare, Secretary and Chief of Staff Shaw, General Counsel Robinson, Chief Compliance and Audit Officer Vacca, Chief Investment Officer Bachher, Provost Dorr, Executive Vice President and Chief Operating Officer Nava, Vice Presidents Budil and Humiston, Chancellors Block, Blumenthal, Hawgood, Katehi, Leland, Wilcox, and Yang, and Recording Secretary McCarthy

The meeting convened at 1:40 p.m. with Committee Chair Pattiz presiding.

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

Upon motion duly made and seconded, the minutes of the meeting of July 23, 2015 were approved.

2. **UPDATE ON THE DEPARTMENT OF ENERGY LABORATORIES AND PRESENTATION ON THE STATE OF THE LAWRENCE BERKELEY NATIONAL LABORATORY**

[Background material was provided to Regents in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Committee Chair Pattiz thanked Regent Pérez for visiting the Los Alamos National Laboratory (LANL). Lawrence Berkeley National Laboratory (LBNL) Director Paul Alivisatos, who would be stepping down as Director once his successor was in place, would provide an update on the state of LBNL. Vice President Budil was currently leading the search for the new LBNL director.

Mr. Alivisatos advised that LBNL was distinctive among all the Department of Energy (DOE) National Laboratories in that it was the most open, networked, and connected to the larger scientific community. LBNL does no classified work and its mission is to create infrastructure and large science programs that are very open to the broad science community. LBNL has a deep connection with UC faculty, many from UC Berkeley and

increasingly from UCSF and UC Davis. Many UC graduate and undergraduate students are regularly engaged at LBNL. LBNL also runs a number of national user facilities, unique instrumentation created at LBNL for the use of scientists from academia and industry, and used by 10,000 scientists per year. LBNL upholds UC's mission by providing science solutions in the public interest. Its ethos is to perform team science, bring large groups of people together to solve problems of great national and international scope.

Mr. Alivisatos cited some current LBNL projects such as X-ray tomography imaging of the interior roots of plants to determine their degree of drought resistance, and battery research, and the discovery of new types of solar energy. The science mission of LBNL was currently thriving.

Mr. Alivisatos described LBNL's history, from its early concentration in high-energy physics and nuclear chemistry, with a subsequent addition of a focus on biological research, to its current broad spectrum of activities still including high-energy physics, but also biology, environmental science, computing, energy efficiency, and renewable energy. Mr. Alivisatos displayed a graph showing LBNL's budget since 2004. Its budget increased consistently from 2004, from just under $600 million to almost $840 million currently, reflecting the health and activity of the community of scientists at LBNL. As at all National Laboratories, there has been an effort to increase diversity and inclusion at LBNL. Science communities have been lacking in diversity for a long time, affecting the pool of available female and minority scientists. During Mr. Alivisatos' tenure, LBNL went from almost no diversity on its leadership team to more than one-third of the leadership team coming from what had been underrepresented groups. He emphasized the critical importance of continuing this trend to support a diverse Laboratory workforce in the future.

New buildings worth almost $700 million have been built at LBNL during the past six years. The new Computing Research and Theory Building, currently just being occupied, would be transformative for the Laboratory. It would house LBNL's supercomputers previously in Oakland, so that LBNL's applied mathematicians and computer scientists could work in proximity with the Laboratory's other scientists. The Solar Energy Research Center and the Energy Storage Research Laboratory demonstrate the priority LBNL places on renewable energy. Even though LBNL's hillside site is densely populated, space is available for future building, because funds from the American Recovery and Reinvestment Act of 2009 enabled the demolition of the Bevatron, leaving a large flat piece of ground in the middle of the Laboratory. The Bevatron site would be the future location of LBNL's biology research, which had been conducted largely off site in Walnut Creek, Berkeley, and other places. LBNL and DOE have settled on a plan to bring all the LBNL biology researchers to LBNL's hill site in the coming years. Ground would be broken soon for the first building on the former Bevatron site, the Integrated Genomics Building that would be fully supported by the DOE. LBNL and DOE were in conversation about a second biology building for research on the environmental impacts of biology. LBNL may seek some support from the University for a third building on the former Bevatron site. In addition, funding has been secured from

the DOE's Office of Environmental Management to demolish remaining LBNL Old Town buildings, which would result in another large site available for future construction.

Mr. Alivisatos observed that future development at LBNL could include participation in the California energy innovation ecosystem. A program called Cyclotron Road had been established using some of LBNL's royalty resources and more than matched by DOE investment, in which entrepreneurs compete for funding to start their companies inside LBNL, with access to its facilities and scientists. A second Cyclotron Road cohort was about to begin in the extraordinary setting of LBNL. The recently built FLEXLAB facility at LBNL is used by companies like Tesla and Genentech to create mock-ups of planned buildings to test energy systems.

The prior year, LBNL created the Berkeley Lab Foundation, the first foundation dedicated to the betterment of a National Laboratory. The Foundation recruited an excellent president, Ivy Clift. Early efforts have revealed great interest in the philanthropic community.

Mr. Alivisatos expressed strong optimism about the future of LBNL, which he said could become the greatest institution in the world at the intersection of energy and environment issues, considering the ongoing revolutions in bioscience. LBNL and DOE were in detailed discussions to upgrade the Advanced Light Source synchrotron, the Laboratory's signature facility. LBNL's cosmology group scientists won two Nobel Prizes in the last decade. New kinds of accelerators are also being developed.

Committee Chair Pattiz thanked Mr. Alivisatos for his work at LBNL.

Regent Ortiz Oakley expressed appreciation for LBNL's efforts to increase diversity, and urged the Laboratory to be a visible part of UC's leadership role in this area by reaching out to high schools and community colleges.

Regent Ruiz asked about LBNL's work in reducing carbon emissions. Mr. Alivisatos responded that LBNL had been involved in important improvements in generating electricity from renewable energy sources in the past five years. Recent increased access to natural gas had substantially reduced carbon emissions in the United States. LBNL is deeply involved in U.S. negotiations with China and other countries regarding carbon emissions.

Regent Zettel asked about the Laboratory's research in artificial photosynthesis. Mr. Alivisatos said LBNL's goal in that area was to create a solar cell that would produce a fuel directly.

3. **APPROVAL OF A SUBSTANTIVE MODIFICATION TO THE LOS ALAMOS NATIONAL SECURITY, LLC OPERATING AGREEMENT AND A PERFORMANCE GUARANTEE TO ENABLE THE TRANSITION OF CERTAIN LEGACY ENVIRONMENTAL WORK AT THE LOS ALAMOS NATIONAL LABORATORY FROM THE CURRENT PRIME CONTRACT TO A NEW PRIME CONTRACT WITH THE DEPARTMENT OF ENERGY**

The President of the University recommended that she be authorized to enter into such written agreements as are necessary to accomplish:

A. A substantive modification to the Los Alamos National Security, LLC (LANS) Operating Agreement that will allow LANS to transition ongoing legacy environmental remediation (ER) work at the Los Alamos National Laboratory from the current prime contract to a new prime contract with Department of Energy (DOE).

B. The transfer of the University's existing performance guarantee for the legacy ER scope of work to the new DOE prime contract and any other actions as may be necessary to authorize LANS to execute the new DOE prime contract.

[Background material was provided to Regents in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Committee Chair Pattiz stated that this action item regarded a new contract between LANS and the Department of Energy (DOE) Office of Environmental Management to manage the disposition of legacy waste as requested by the Secretary of Energy. The new contract required an amendment to the Operating Agreement of the LLC and the performance guarantee from each of the LLC partners, as is required by the current management agreement and operating contract with the DOE. The President and the Office of the General Counsel had fully reviewed the contract.

Vice President Budil recalled that the breach of a Los Alamos National Laboratory (LANL) waste barrel at the Waste Isolation Pilot Plant (WIPP) the prior year resulted in a number of actions, including administrative changes at LANL and process changes with the DOE. The Secretary of Energy had directed that, in order to enhance oversight of this work and to allow LANL leadership to focus its energy on that Laboratory's mission execution, the remediation of legacy environmental waste would be placed under a separate contract to be directly administered by the DOE Office of Environmental Management. LANS would hold a bridge contract for a period not to exceed two years, while the DOE prepared for a competitive procurement process. LANS would continue to manage this work for two years, after which the work would be transitioned to a new contractor. Ms. Budil emphasized that the work represented about $150 million, or eight percent of the LANL $2 billion budget.

The Regents were being asked to authorize execution of the new contract, with a base term of one year and an option for two six-month extensions. In general, the University's

risks under the new contract would be the same or slightly reduced. Some of the terms would be slightly better for the University than under the existing contract. In particular, the technical risks would be the same as under the former contract. Minor administrative changes requested by the DOE were all within the capacity of LANL to execute.

Risk would be reduced in two important areas. In LANL's performance evaluation the prior year, the incident at WIPP had greatly affected the performance scores for LANL, resulting in a dramatic, almost 90-percent reduction in the fee earned. Under the new separate contract, the only fee that would be at risk would be the fee associated with this specific work. The work conducted under the LANS management and operating contract would be unaffected by issues associated with the environmental management work. Secondly, the fee associated with the new contract would be slightly higher, so the potential existed over the two years to earn a slightly larger management fee for the execution of the contract.

Approval of the Regents is required to change the operating agreement of the LANS LLC, which was created as a single-purpose LLC to execute the management and operating contract to run LANL. The operating agreement would be amended to reflect the fact that LANS would also execute this contract with the DOE Office of Environmental Management, requiring the approval of The Regents as one of LLC members. Approval of The Regents was also required for the transfer of the performance guarantee for the management and operations contract to the environmental management contract for that scope of work.

Upon motion duly made and seconded, the Committee approved the President's recommendation and voted to present it to the Board.

The meeting adjourned at 2:20 p.m.

Attest:

Secretary and Chief of Staff