The Regents of the University of California

COMMITTEE ON OVERSIGHT OF THE DEPARTMENT OF ENERGY LABORATORIES
March 23, 2016

The Committee on Oversight of the Department of Energy Laboratories met on the above date at UCSF–Mission Bay Conference Center, San Francisco.

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

In attendance: Regents Elliott, Gorman, Gould, Island, Lansing, Makarechian, Ortiz Oakley, Oved, Pérez, and Sherman, Regents-designate Brody, Ramirez, and Schroeder, Faculty Representative Hare, Secretary and Chief of Staff Shaw, General Counsel Robinson, Executive Vice President and Chief Operating Officer Nava, Executive Vice President Stobo, Senior Vice President Henderson, Vice Presidents Budil and Duckett, Chancellors Block, Blumenthal, Hawgood, Leland, and Wilcox, and Recording Secretary McCarthy

The meeting convened at 2:10 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 September 16, 2015 were approved.

2. **UPDATE ON THE DEPARTMENT OF ENERGY LABORATORIES AND PRESENTATION ON LOS ALAMOS 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 reported that discussions between the Department of Energy's (DOE's) National Nuclear Security Administration (NNSA) and Los Alamos National Laboratory (LANL) regarding the LANL contract were ongoing, with the active engagement of Vice President Budil, Committee Chair Pattiz, and the Los Alamos National Security LLC (LANS) executive committee. LANS had not been granted an award term extension, but the NNSA had subsequently asked it to continue its LANL management for a year, giving the University some leverage in negotiations. The University would like to arrive at an agreement that would allow it to focus on its mission at LANL.

Vice President Budil introduced the new Director of Lawrence Berkeley National Laboratory (LBNL) Michael Witherell, former Vice Chancellor for Research at UC Santa Barbara and Director of the Fermi National Accelerator Laboratory. Mr. Witherell expressed his enthusiasm for his new position, which he had held for 23 days. He had served at UC Santa Barbara for 29 years, 18 as a faculty member and 11 years as Vice Chancellor. He strongly identified with the mission of the University and LBNL's mission to solve the world's most challenging problems through great science and technological discovery. He relished this opportunity to lead what he considers UC's greatest laboratory. LBNL is a world leader in many areas of sustainability research, including energy sciences, renewable energy, energy efficiencies, sustainable manufacturing, climate and ecosystem science, and energy geosciences. Meeting President Napolitano's Carbon Neutrality Initiative and California's energy goals would require breakthroughs in science and technology, and LBNL would be an important part of these efforts. Mr. Witherell also expressed his commitment to developing a more diverse and inclusive Laboratory community.

Ms. Budil introduced LANL Director Charles McMillan to discuss the state of LANL. Mr. McMillan commented that, while LANL had experienced some recent difficulties, it had many successes made possible by its continuing relationship with UC. The first area he discussed was LANL's global security program. LANL has conducted research in space since the early 1960s, when it developed a satellite mechanism to verify President Kennedy's Nuclear Test Ban Treaty. Mr. McMillan displayed the Los Alamos Agile Space Platform, a small innovative satellite enabling communications in denied areas. These satellites are reprogrammable while in orbit to accomplish various missions. LANL was able to accomplish this project at a cost that was 1/100th of the typical cost and in one-fifth the time.

In the field of energy, Mr. McMillan observed that the DOE funds 32 Energy Frontier Research Centers, but only one is hosted at a NNSA Laboratory. LANL with UC Irvine hosts research in quantum dot technology to collect sunlight on windows, change its wavelength, and channel that light to the edge of the window where photo cells would collect the light. This technology could be used to produce solar energy from windows throughout the world.

Mr. McMillan cited a third example of LANL research in material properties at the mesoscale. LANL has been working for the past seven years to build a proposal to enable it to study performance and production of materials at the mesoscale. The University would collaborate with LANL in this research.

Mr. McMillan discussed LANL's workforce. As with many technical organizations, LANL has a demographic peak of employees nearing retirement, providing LANL an opportunity to shape its future workforce and employment opportunities for current graduates. The LANL postdoctoral scholar program is an important part of LANL's employee pipeline. A summer student program brings undergraduate and graduate students to LANL. Almost one-third of LANL's research scientists and laboratory leaders have come through its student and postdoctoral programs. UC makes some of the largest

contributions to that student and employee pool. He urged the University to continue to send LANL its best students.

Mr. McMillan summarized that LANL achieves its mission by integrating science, production, and operations. LANL is complex, but that complexity is essential to serve the nation's and LANL's missions by using multi-disciplinary science, technology, and engineering.

Regent Ortiz Oakley asked how LANL's satellite technology would be commercialized, the role UC would play in that commercialization, and what benefit would accrue to the University. Mr. McMillan responded that the Richard P. Feynman Center for Innovation at LANL was the focus of its technology transfer. In the field of national security, LANL would likely work through centers like the Kansas City National Security Campus, part of the NNSA system, to commercialize its technology.

Regent Makarechian expressed appreciation for Mr. McMillan's report and asked if the type of material in his report could be included in the meeting materials sent to the Regents. Regarding advances in encryption, he asked how LANL protects its own information. Mr. McMillan responded that the NNSA instructs LANL on encryption of its most sensitive information. A new type of encryption, quantum key distribution technology, developed at LANL, was now being commercialized. Regent Makarechian asked how that technology would be protected. Mr. McMillan responded that the quantum key distribution technology is open and not classified.

Regent Davis commented that the alumni Regents and Regents-designate had recently toured LBNL and Lawrence Livermore National Laboratory and were impressed with the value of the National Laboratories and their collaboration with the University. Since the alumni representatives receive an increasing number of requests from current UC students and recent graduates for help in securing employment, he emphasized the importance of the National Laboratories as sources of employment for UC graduates. Mr. McMillan added that LANL is currently hiring new employees.

President Napolitano thanked Mr. McMillan and Mr. Witherell. She commented that LANL occupies a unique niche among the National Laboratories. She asked Mr. McMillan to provide information about what fields of study and curricula were currently needed to prepare UC students for work at the National Laboratories. Mr. McMillan responded that he could provide specific information about needs at LANL from its staffing plans for the upcoming five years.

The meeting adjourned at 2:40 p.m.

Attest:

Secretary and Chief of Staff