The Regents of the University of California

COMMITTEE ON OVERSIGHT OF THE DEPARTMENT OF ENERGY LABORATORIES
January 22, 2014

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, De La Peña, Gould, Island, Pattiz, Reiss, Schultz, and Zettel; Ex officio members Lansing, Napolitano, and Varner; Advisory member Gilly

In attendance: Regents Feingold, Flores, Kieffer, Makarechian, Ruiz, Sherman, and Wachter, Regents-designate Engelhorn, Leong Clancy, and Saifuddin, Faculty Representative Jacob, Secretary and Chief of Staff Kelman, Associate Secretary Shaw, General Counsel Robinson, Chief Compliance and Audit Officer Vacca, Provost Dorr, Executive Vice President Brostrom, Chief Financial Officer Taylor, Senior Vice Presidents Dooley and Stobo, Vice Presidents Allen-Diaz, Brown, Duckett, and Lenz, Chancellors Block, Blumenthal, Desmond-Hellmann, Drake, Katehi, Leland, Wilcox, and Yang, and Recording Secretary McCarthy

The meeting convened at 11:50 a.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 November 13, 2013 were approved.

2. **ADMINISTRATIVE UPDATE ON THE DEPARTMENT OF ENERGY LABORATORIES**

[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 the search for the director of the Lawrence Livermore National Laboratory (LLNL) was ongoing. As chairman of the Board of Governors of the Lawrence Livermore National Security LLC (LLNS), Committee Chair Pattiz leads the search and the appointment of the LLNL director would be made by the University with the concurrence of the U.S. Secretary of Energy and the administrator of the National Nuclear Security Administration (NNSA). Committee Chair Pattiz anticipated that the search would be concluded by April. The search for the Vice President – Laboratory Management, led by Provost Dorr, was also moving forward.

Associate Vice President David McCallen updated the Regents on the Department of Energy's (DOE's) outstanding pension contribution for Los Alamos National Laboratory (LANL) and LLNL. The DOE's prior outstanding balance of $453 million was broken

into two parts: one due in 2013 and a major contribution due in 2014. By early December, 2013, the DOE had sent $106 million to UC, which Mr. McCallen characterized as a good start toward rectifying the situation. The federal omnibus spending bill brought the federal budget and the DOE a significant degree of stability that had been lacking in recent years. In light of that, Mr. McCallen said it is highly likely that the remaining $347 million would be paid in late January or early February.

3. **NUCLEAR SCIENCE AND SECURITY CONSORTIUM, BERKELEY CAMPUS, AND OTHER RESEARCH HIGHLIGHTS FROM THE DEPARTMENT OF ENERGY LABORATORIES**

[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.]

Associate Vice President David McCallen introduced Professor Karl Van Bibber, Chairman of the Department of Nuclear Engineering at UC Berkeley, to provide an update on the Nuclear Science and Security Consortium (NSSC), an educational collaboration including four UC campuses and three UC-affiliated National Laboratories, funded with $25 million over five years by the National Nuclear Security Administration (NNSA).

Professor Van Bibber stated that every four years the United States issues its Quadrennial Nuclear Posture Review, taking stock of the safety, reliability, and robustness of its nuclear arsenal and the global posture of the threat of nuclear proliferation. In 2010, under President Obama, for the first time, staunching the threat of nuclear proliferation and nuclear terrorism was given the highest priority in the nuclear posture review, rather than the health of the nuclear stockpile. The NSSC was funded by NNSA with $25 million as a pipeline program to prepare several hundred additional new Ph.D.s in all areas of the nuclear field and to transition them into the DOE workforce. Former Chair of UC Berkeley's Department of Nuclear Engineering, Professor Jasmina Vujic submitted the winning proposal and was awarded leadership of the NSSC, enabled by the UC Laboratory Fees Research Program.

Professor Van Bibber explained that this demanding field requires highly trained experts in special nuclear materials, monitoring of nuclear materials, advanced safeguards requiring ever greater technology, and nuclear radiation detection. Students come from subdisciplines such as nuclear physics, nuclear chemistry, nuclear engineering, nuclear instrumentation, nuclear policy, and nuclear education. The ideal student candidates would have great technical depth and their association with the National Laboratories would broaden their understanding of the interdisciplinary nature of the problem and the nonproliferation mission. Students are exposed to exciting basic and applied research programs and gain excellent preparation for transitioning to the DOE workforce.

Seven universities, including UC Berkeley, UC Davis, UC Irvine, and UC San Diego, were selected to participate because of their deep expertise in complementary nuclear competencies. Because of its comprehensive excellence in nuclear physics and nuclear engineering, UC Berkeley was chosen to lead the NSSC. UC Davis excels in all aspects

of nuclear radiation detection; UC Irvine has a training reactor where many students are qualified as reactor operators each year; UC San Diego is home to the Institute for Global Conflict and Cooperation.

Students are attracted to working at the National Laboratories by the opportunity to be exposed to exciting basic and applied research programs and unique facilities such as the National Ignition Facility at LLNL. Experience has shown that the transition rate into National Laboratory employment is highest, well above 50 percent, for those students who had the opportunity to conduct their Ph.D. research on site at a National Laboratory with both an academic advisor and a Laboratory research advisor working together. To date, the NSSC had supported more than 140 students, about 30 of whom currently work in residence at a National Laboratory. Many more students come into contact with the NSSC through its summer schools, nuclear policy boot camps, and other programs. Summer school programs have been conducted at UC Davis, Michigan State University, the University of Nevada, Las Vegas, and UC San Diego. A successful one-week plenary session for all NSSC summer 2013 participants included attendance of National Laboratories' senior managers, NSSC's external board of advisors, presentation of student research posters, and comprehensive tours of the Bay Area National Laboratories.

During the NSSC's first year, the Department of Energy (DOE) added $1.5 million to engage minority-serving institutions. For the past two years NSSC had selected and hosted summer research interns at the National Laboratories. The prior year NSSC held a competition and, from the 29 excellent proposals submitted, awarded five DOE-NNSA grants for up to three years to faculty at minority-serving universities through which exceptional research is being conducted. This program should increase the diversity of well-qualified applicants for positions at the National Laboratories. Professor Van Bibber cited research involving neutrino detection in the monitoring of nuclear reactors as an example of NSSC's leveraging NNSA funds beyond the initial program to assist development of technologies that could have wide applications for national security.

NSSC has also developed expertise in integrated teaching of nuclear technology, policy, and ethics. UC Berkeley Professor Stanley Prussin, nuclear chemist, and Professor Michael Nacht, former Dean of the Goldman School of Public Policy, created a UC Berkeley course "Nuclear Security: The Nexus Between Policy and Technology" that has become extremely popular. NSSC and UC are poised to take a national leadership role in this area by training policy experts with a deep knowledge of the technology, and technologists who understand the policy implications of their field of expertise. At the U.S. Department of State's request, the NSSC submitted a proposal to set up a program through which senior personnel from Brazil, India, Egypt, and Pakistan could obtain training in this area.

Professor Van Bibber encouraged the Regents to visit the NSSC's website, and noted that Edward Hartouni of LLNL was appointed as NSSC's ombudsman to help optimize its working relationship with the National Laboratories. The NNSA issued two new funding opportunities for $25 million centers like the NSSC, one in the area of reactor safeguards and the other in nuclear forensics. The NSSC's board of advisors is currently

looking beyond its initial five years to explore ways to make the NSSC permanent, perhaps through foundation funding or further federal support.

Committee Chair Pattiz thanked Professor Van Bibber for his excellent presentation demonstrating how the National Laboratories address the world's biggest problems.

The meeting adjourned at 12:10 p.m.

Attest:

Secretary and Chief of Staff