MINUTES
of the
SIXTH MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE

November 8, 2017
State Capitol, Room 307
Santa Fe

The sixth meeting of the Science, Technology and Telecommunications Committee was called to order by Representative Candie G. Sweetser, chair, on November 8, 2017 at 10:05 a.m. in Room 307 of the State Capitol in Santa Fe.

Present
Rep. Candie G. Sweetser, Chair
Sen. Michael Padilla, Vice Chair
Rep. Kelly K. Fajardo
Rep. Jason C. Harper
Sen. Mark Moores
Rep. James E. Smith
Rep. Linda M. Trujillo

Absent
Sen. William F. Burt
Rep. Daymon Ely
Sen. Bill B. O'Neill
Rep. Debra M. Sariñana
Sen. William P. Soules
Rep. Monica Youngblood

Advisory Members
Sen. Craig W. Brandt
Sen. Carlos R. Cisneros
Rep. Stephanie Garcia Richard
Rep. Bill McCamley
Sen. Mary Kay Papen
Rep. Debbie A. Rodella
Sen. Nancy Rodriguez
Rep. Nick L. Salazar
Sen. Bill Tallman
Rep. Carl Trujillo

Sen. Jacob R. Candelaria
Sen. Ron Griggs
Sen. Richard C. Martinez
Sen. William H. Payne
Sen. Peter Wirth

Guest Legislator
Sen. Howie C. Morales

Minutes Approval
Because the committee will not meet again this year, the minutes for this meeting have not been officially approved by the committee.

Staff
Mark Edwards, Legislative Council Service (LCS)
Ralph Vincent, LCS
Maria Alaena Romero, LCS

Guests
The guest list is in the meeting file.

Handouts
Handouts and other written testimony are in the meeting file.

Wednesday, November 8

Call to Order
Representative Sweetser called the meeting to order and invited committee members and staff to introduce themselves.

Sandia National Laboratories (SNL) Update
Dr. Stephen Younger, laboratory director, SNL, described the makeup and mission of SNL. SNL's $3.17 billion budget supports five major program portfolios: 1) energy and homeland security; 2) advanced science and technology; 3) nuclear deterrence; 4) defense nuclear nonproliferation; and 5) national security. These programs include a total workforce of 12,258, with 10,941 in Albuquerque and the Waste Isolation Pilot Plant in Carlsbad. The remaining 1,317 employees are mostly in Livermore, California, with small numbers in Tonopah, Nevada; Amarillo, Texas; and Kauai, Hawaii. Forty-nine percent of the staff are classified as technical research; 33 percent are operations support; and the remainder are management and students.

The mission of SNL is to develop advanced technologies to ensure global peace, and SNL has met national security challenges through the decades since the arms race in the 1950s. The National Technology and Engineering Solutions of Sandia, LLC, management team took over operations of SNL on May 1, 2017.

All five major programs at SNL include an emphasis on cybersecurity. This includes deterrence, protection and preemptive measures to ensure that the future is safe from cyber attacks. SNL's budget also covers a broad range of government and other work, with almost 51 percent concentrated on non-nuclear weapons, another 28 percent dedicated to U.S. Department of Defense projects, 7.6 percent for other U.S. Department of Energy projects, 6.4 percent dedicated to nonproliferation projects and seven percent for other types of projects.

SNL contributes to the New Mexico economy in several significant ways:

- by attracting professionals to the state;
- by procurements of goods and services;

- with transfer of technology programs;
- by creating partnerships with New Mexico universities; and
- with a large payroll and pension plan.

Other important facts provided by Dr. Younger were:

- 38 percent of SNL employees hold a higher education degree from a New Mexico school;
- the average salary for regular employees is $100,424;
- the pension program is in excellent shape and provides more than $180 million annually to New Mexico residents;
- purchases from New Mexico businesses total over $395 million;
- New Mexico small businesses represent 66 percent of all SNL suppliers;
- SNL paid over $80 million in gross receipts and corporate taxes to the state in fiscal year 2016; and
- diversity and inclusion are integral to SNL's strategy; minority and female representation is increasing, and the laboratory has programs to continue this increase.

Dr. Younger also discussed the New Mexico Small Business Assistance Program that is in partnership with the state to bring SNL's expertise to small companies statewide. In 2016, SNL provided $2.4 million in assistance to 198 small businesses in 19 counties around the state.

Dr. Younger also talked about partnerships with New Mexico universities. SNL is involved in $4.3 million of collaborative research projects with New Mexico State University (NMSU), the New Mexico Institute of Mining and Technology (NM Tech) and the University of New Mexico (UNM). SNL is also working on a five-year tactical plan that includes more collaboration with the universities.

Questions from the Committee

Responding to questions from committee members regarding the impacts of SNL on New Mexico, Dr. Younger reiterated SNL's collaboration efforts with small businesses and technology transfer projects with universities. New Mexico businesses receive a five percent advantage when bidding on any procurement, but these go through the "national supply chain" set up by federal departments. New Mexico has been a good and friendly host of SNL, and the result has been to raise the economic status of the state. On the issue of collaboration with universities, Dr. Younger cited work with NM Tech, the U.S. Department of Homeland Security and SNL on a project in Playas, New Mexico, and the work with NM Tech and UNM on cybersecurity issues. Dr. Younger noted that SNL's first priority is work on laboratory projects, but its second priority is collaboration on research in these other areas.

Education and the creation of a viable workforce was another topic of interest. While education challenges are sometimes discussed as a hindrance to the viability of New Mexico's workforce, Dr. Younger believes that the state has made progress with various science,

technology, engineering and mathematics (STEM) education projects. SNL employs around 4,000 alumni of New Mexico's colleges and universities.

Dr. Younger stated that he was "bullish" on SNL because of its tremendous capabilities. He stated that job satisfaction, work/life balance and the work environment are important factors in hiring and keeping a qualified workforce. He also stated that the Congressional Budget Office plans to spend $1.2 trillion over the next 30 years on nuclear deterrence and that SNL is key to this effort.

Secretary of State's Update on Campaign Finance Information System

Maggie Toulose Oliver, secretary of state, briefed the committee on the status of technology projects within the Office of the Secretary of State (SOS). The information technology group at the SOS completed the business filing modernization project in June 2016 with a total cost of $1.27 million. The information technology group at the SOS expects the new election system to be operational in December 2017. Total cost on this project was $1.9 million. This system includes improved election results delivery and streamlined ballot creation. The group is also close to final implementation of an online voter registration system that provides convenient access to create and update voter records and integrates with the Motor Vehicle Division of the Taxation and Revenue Department system.

As for the New Mexico Campaign Finance Information System, Secretary Toulouse Oliver described the background and provided alternatives for a path forward. House Bill (HB) 105, passed during the 2016 regular legislative session, focused on greater transparency and more reporting capabilities of campaign finance data. The SOS does not have the resources available to develop or purchase a system to be in compliance with the requirements of HB 105. It has sought funding for this project since 2016 and has submitted a C-2 request for the upcoming legislative session in the amount of $985,000. The SOS is proposing a collaboration with MapLight on a development project to build a system using the New Mexico specifications. The resulting system could then be used by other states with similar requirements. The SOS is hoping to secure additional funding to offset the full cost of development.

Questions from the Committee

Committee members asked questions to clarify the SOS plans for the campaign finance information system. Secretary Toulouse Oliver and Kari Fresquez, elections director and chief information officer, SOS, stated that the SOS would be using the current systems if new funding is not received. The SOS has submitted a C-2 request for the project and also has included the software as part of a capital outlay request. After receiving funding, the SOS will develop a plan based on the amount available. To date, the SOS has investigated the following three ways of satisfying the requirements of HB 105: 1) in-house development starting with the current system; 2) a commercial off-the-shelf solution; and 3) collaboration with MapLight to develop a full-function system. If the SOS collaborates with MapLight, the system would be developed as an open-source solution, and the SOS would take control and manage its own copy of the solution.

There was further discussion regarding Senate Bill (SB) 96, which passed during the 2017 regular session. SB 96 was vetoed by the governor, but many of the requirements were subsequently implemented by SOS rule.

Small Cell Technology and the Wireless Consumer Advanced Infrastructure Investment Act

Representative Smith and Senator Candace Gould joined a panel with Terri Nikole Baca, director of external affairs, AT&T, and De O'Roark, associate general counsel, Verizon. The panel briefed the committee on the emergence of small cell technology and discussed the legislative needs for this new technology. Small cell technology involves low-powered cellular radio access nodes as a way of pushing 5G technology out in metropolitan areas. Wireless providers typically use small cell technology by locating these small wireless nodes in the public right-of-way areas on existing utility poles. The panel urged passage of legislation to establish the requirements for local authorities to establish rates, fees and terms for collocation of these small wireless nodes in the public rights of way.

Thirteen bills have already been passed by legislatures, including in the neighboring states of Texas, Colorado and Arizona. The key components of this legislation include rules regarding rights of way, reasonable costs and a streamlined administrative process. The example legislation is included in the committee folder.

Ed Mahr, registered lobbyist for T-Mobile Wireless, stressed the need for serious consideration of this legislation during the upcoming session. The wireless providers are working with the New Mexico Municipal League to develop legislation.

Questions from the Committee

The panel was asked to further describe the technology and its impact. The panel explained that the new 5G technology will provide the answer to growing data needs because it is up to 100 times faster and can connect 100 times as many devices as current 4G technology. The technology could be implemented in urban areas with populations greater than 10,000. In New Mexico, the wireless providers are targeting Albuquerque, Rio Rancho, Santa Fe, Farmington, Las Cruces and Hobbs. The small cell nodes use an assigned frequency that is specific to a provider, and each node is connected to a backhaul provider similar to the macro network configuration. The small cell nodes could be concentrated in high-use areas to increase load capacities. Damian Doncker, director of engineering, AT&T, explained that a fiber-based backhaul is still necessary to transport data back to the network, and the decision on how to connect it is the purview of each provider.

The panel answered questions related to rural versus urban infrastructure by stating that there are significant build-out investments in areas with low population densities. Investment decisions are based on the demands and coverage in each area. Panel members said that a service provider's choice to invest in macro or micro technologies must fit within its business accounting model.

Questions were asked about the other stakeholders, such as rural telephone companies and cable companies, as well as the involvement of the Federal Communications Commission (FCC). Proposed language has been sent to all identified stakeholders, and comments and inputs have been incorporated. The FCC may adopt high-level administrative rules, but the states will still need to provide the regulations. Municipalities may adopt home rule policies, and the providers will have to deal with local codes and/or laws.

A comparison was drawn with the development of the railroad network and the eventual regulation at the federal level to prevent exorbitant rates and administrative policies. While the proposed language does include maximum rates to be charged, there were questions regarding sufficiency. The rates being proposed are comparable to other states.

Los Alamos National Laboratory (LANL) Update

Terry C. Wallace, Jr., principal associate director for global security, LANL, provided the committee with an update on the status of operations at LANL. The laboratory was established in 1943 and currently has a workforce of 11,804, with 7,653 being LANL career employees. The other 4,151 are contractors, students, term associates and craft employees. Based on LANL's five-year projections and attrition models, as much as 32 percent of the current workforce will retire or leave by 2022. LANL's annual budget is about $2.5 billion, and about 77 percent of the budget comes from the National Nuclear Security Administration (NNSA). The remainder is derived from the U.S. Department of Energy and other strategic partnerships.

LANL is the largest employer in northern New Mexico and has a commitment to being a good neighbor in a close-knit regional community. Under its Community Commitment Plan, LANL has invested $35 million since 2006 in the areas of STEM education, economic development programs and support for community organizations. LANL also has a center to coordinate partnerships with industry and to help with licenses for technology innovations.

The primary mission of LANL is strategic deterrence, and it is responsible for about 80 percent of the nation's stockpile of nuclear materials. LANL began as a physics laboratory but is much more diverse now. As with SNL, LANL is spending increasing amounts of time on cybersecurity issues.

Questions from the Committee

Several questions from committee members centered on the steps being taken to attract and hire the next generation of employees. LANL has focused on diversity and recruits broadly, while working with New Mexico educational institutions to attract the required workforce. While UNM is the largest contributor of applicants, NMSU and NM Tech also provide a significant number. LANL has many agreements with other universities and has developed programs at Northern New Mexico College. LANL's outreach to public education groups is limited except for the STEM initiatives. It was noted that New Mexico does not have an earth science requirement for high school students.

Asked about small business procurement activities, Mr. Wallace said that much of the procurement is handled at the federal level with the NNSA, but there are significant local business opportunities.

Mr. Wallace said that the request for proposals for management of LANL had been issued, and December 11, 2017 is the deadline for submission of proposals. The contract will be awarded by October 2018. His best estimation is that LANL's activities are stable, but a report is due to be released in January.

Approval of Minutes

A motion to approve the minutes of the September 25-26 meeting was made by Senator Padilla and seconded by Representative Smith. The minutes were approved with an amendment.

Virgin Galactic Space Flight Operations Status Update

Richard DalBello, vice president, Business Development and Government Affairs, Virgin Galactic, assured the committee members that Virgin Galactic's development program is progressing well and the company's activities are coming to New Mexico soon. Currently, Virgin Galactic has 600 staff members in Mojave, California, and is building two new spaceships. Last month, Virgin Galactic received a license from the Federal Aviation Administration for suborbital launches. It is concentrating in two areas: suborbital launches for personal and research spaceflight; and small satellite orbital launches.

Virgin Galactic has a 20-year lease for the Spaceport America facility and has spent roughly $20 million in the state so far. It currently has 30 full-time employees and expects to have another 85 employees next year.

Mr. DalBello then explained Virgin Galactic's technology. SpaceShip Two is a fully reusable suborbital system designed to take two pilots, plus as many as six astronauts or a research payload into space. White Knight Two is a four-engine, two-fuselage jet aircraft capable of carrying SpaceShip Two into high altitude for launch. This aircraft has been flown more than 200 times for testing and has carried SpaceShip Two more than 40 times. He said the expectation is that the final testing program and preparation for the initial commercial launches will move to New Mexico in 2018. He added that more than 600 people from more than 50 countries have made reservations to fly into space from Spaceport America. He also indicated that Virgin Galactic will be well poised to serve a growth market in high-quality, microgravity exposure research.

Questions from the Committee

Responding to a question, Mr. DalBello confirmed that Saudi Arabia plans to invest approximately $1 billion in Sir Richard Branson's three commercial space companies, including Virgin Galactic.

Mr. DalBello was asked about Virgin Galactic's community education outreach. A committee member suggested that the company develop a short information pamphlet for public distribution that would outline the economic projections regarding space tourism and microgravity exposure research connected to Virgin Galactic's operations at Spaceport America.

It was noted that a contract has been established to begin construction on the southern road to the spaceport.

Adjournment

The meeting was adjourned at 4:35 p.m.