

SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE



REPORT to the FIFTIETH LEGISLATURE

December 2011
Legislative Council Service

**SUMMARY OF THE SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS
COMMITTEE
INTERIM 2011 WORK**

The science, technology and telecommunications committee met one day each in Albuquerque, Los Alamos and Socorro and six days in Santa Fe. The committee covered each topic in its scope of work, hearing testimony on:

1. information technology and telecommunications systems of the department of information technology, taxation and revenue department and workforce solutions department;
2. overview of mission, budgets and staffing at Sandia and Los Alamos national laboratories;
3. telecommunications regulatory reform;
4. rural universal service support and long-distance interconnections;
5. electric power transmission and distribution developments;
6. renewable energy transmission authority developments;
7. UNM, NMSU and New Mexico tech research initiatives;
8. cybersecurity;
9. broadband status;
10. Spaceport America status;
11. E-911 legislation;
12. energy efficiency potential for utilities;
13. smart grid research and development;
14. renewable energy technologies;
15. compressed natural gas industries; and
16. metal theft legislation.

The committee endorsed proposed legislation to provide tax incentives for pyrolysis-derived hydrogen producers.

Work Plan

**2011 APPROVED
WORK PLAN AND MEETING SCHEDULE
for the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

Members

Rep. Roberto "Bobby" J. Gonzales, Chair
Sen. Stephen H. Fischmann, Vice Chair
Rep. Cathrynn N. Brown
Sen. William F. Burt
Sen. Dede Feldman
Sen. Phil A. Griego
Rep. Conrad D. James

Sen. Linda M. Lopez
Sen. Steven P. Neville
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. James E. Smith
Rep. Luciano "Lucky" Varela

Advisory Members

Rep. Ray Begaye
Sen. Mark Boitano
Sen. Carlos R. Cisneros
Rep. Ben Lujan
Sen. Richard C. Martinez

Sen. William H. Payne
Rep. Danice Picraux
Sen. John M. Sapien
Rep. Don L. Tripp
Rep. Richard D. Vigil

Work Plan

During the 2011 interim, the committee intends to review:

1. information technology systems operations and management;
2. electric energy generation, transmission and distribution, including smart grid technology;
3. renewable energy portfolio standards;
4. statewide broadband access and cost;
5. the New Mexico Renewable Energy Transmission Authority;
6. status of the spaceport;
7. technology research at Sandia National Laboratories and Los Alamos National Laboratory, their budget status and staffing levels;
8. emerging technology enterprises;
9. telecommunications competition in New Mexico and how competitors are regulated (or not) by the Public Regulation Commission (PRC);
10. activities at the PRC that may address telecommunications competition/regulation in New Mexico;
11. supercomputer update;
12. state educational institutions' roles in science and technology education and relations with national laboratories;
13. e-learning and distance learning; and
14. status of public broadcasting resources in southern New Mexico.

2011 Approved Meeting Schedule

<u>Date</u>	<u>Location</u>
June 10	Santa Fe
July 21-22	Los Alamos/Santa Fe
September 1-2	Albuquerque/Socorro
October 24-25	Santa Fe
November 28-29	Santa Fe

Agendas

TENTATIVE AGENDA
for the
FIRST MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE

June 10, 2011
Room 307, State Capitol
Santa Fe

Friday, June 10

- | | |
|------------|--|
| 10:00 a.m. | Call to Order
—Representative Roberto "Bobby" J. Gonzales, Chair |
| 10:05 a.m. | Interim Committee Protocols
—Raúl E. Burciaga, Director, Legislative Council Service |
| 10:30 a.m. | Department of Information Technology (DOIT)
—Darryl Ackley, Secretary, DOIT |
| 11:30 a.m. | 2011 Interim Work Plan and Meeting Schedule |
| 12:00 noon | Adjourn |

Revised: July 20, 2011

**TENTATIVE AGENDA
for the
SECOND MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**July 21, 2011
Room 307, State Capitol
Santa Fe**

**July 22, 2011
Fuller Lodge, 2132 Central Avenue
Los Alamos**

Thursday, July 21 — State Capitol, Santa Fe

- 10:00 a.m. **Call to Order**
—Representative Roberto "Bobby" J. Gonzales, Chair
- Telecommunications Regulatory Reform**
—Loretta A. Armenta, Director, State Regulatory and Legislative Affairs,
 Qwest
—Leo Baca, Director, State Legislative Affairs, Qwest
- 11:00 a.m. **Rural Universal Service Support and Long-Distance Interconnections**
—Sam Ray, New Mexico Exchange Carrier Group
—John Francis, Western New Mexico Telephone Company
—Jeremy Graves, Valley Telephone Cooperative
- 12:00 noon **Lunch**
- 1:30 p.m. **Electric Power Transmission and Distribution Developments**
—Mike Hightower, Energy Surety Engineering and Analysis Department,
 Sandia National Laboratories
- 2:30 p.m. **New Mexico Renewable Energy Transmission Authority
Developments**
—Jeremy Turner, Executive Director, New Mexico Renewable
 Energy Transmission Authority
- 3:30 p.m. **New Mexico Computing Applications Center — Supercomputing
(Encanto) Facility Status**
—Dr. Tom Bowles, Governor's Science Advisor
- 5:00 p.m. **Recess**

Friday, July 22 — Fuller Lodge, Los Alamos

- 9:00 a.m. **Los Alamos National Laboratory (LANL) Report and Breakthrough Technologies**
—Terry Wallace, Principal, Associate Director for Technology and Engineering, LANL
- 10:00 a.m. **LANL Education and Community Investment Plan**
—Kurt Steinhaus, Community Programs Officer, LANL
- 11:00 a.m. **Information Technology Investments at LANL**
—Elaine Santantonio, Manager, Network Infrastructure Engineering, LANL
- 12:00 noon **Adjourn**

Revised: August 30, 2011

**TENTATIVE AGENDA
for the
THIRD MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**September 1, 2011
Science and Technology Center, University of New Mexico
UNM Science & Technology Park
801 University Blvd. SE, Suite 101
Albuquerque**

**September 2, 2011
New Mexico Institute of Mining and Technology
The Joseph R. Skeen Library, Conference Room
Socorro**

**Thursday, September 1, Science and Technology Center, University of New Mexico
(UNM), Albuquerque**

- 9:00 a.m. **Call to Order**
—Representative Roberto "Bobby" J. Gonzales, Chair
- 9:05 a.m. **Welcome**
—Chaouki T. Abdallah, Interim Provost and Executive Vice President for
Academic Affairs, UNM
- 9:10 a.m. **Sustained Research Initiatives**
—Julie E. Fulghum, Vice President for Research and Economic Development,
Center for High Technology Materials (CHTM)
—Steven R.J. Brueck, Director, CHTM
—Sanjay Krishna, Associate Director, CHTM
—Mary Jo Daniel, Associate Director, New Mexico Experimental Program to
Stimulate Competitive Research
—Heather Canavan, Associate Professor, Partnership for Research and Education
in Materials
- 10:00 a.m. **Distance Learning Programs**
—Debby Knotts, Director, New Media and Extended Learning, UNM
—John Cornish, Director, Curriculum Planning and Program Development, UNM
- 11:00 a.m. **Broadband**
—Gil Gonzales, Chief Information Officer, UNM

- 12:00 noon **Working Lunch**
- 1:00 p.m. **Sandia National Laboratories Research Highlights**
—Jerry Simmons, Science Technology and Engineering Innovations and
Partnerships, Sandia National Laboratories
- 2:00 p.m. **E-911 Legislation**
—Paul Gutierrez, Executive Director, New Mexico Association of Counties
- 3:00 p.m. **Recess**

Friday, September 2, New Mexico Institute of Mining and Technology, The Joseph R. Skeen Library, Conference Room, Socorro

- 9:00 a.m. **Big Science at New Mexico Institute of Mining and Technology**
—Van D. Romero, Vice President for Research and Economic Development,
New Mexico Institute of Mining and Technology
- 10:00 a.m. **Cybersecurity**
—Srinivas Mukkamala, Senior Research Scientist, Institute for Complex Additive
Systems Analysis, New Mexico Institute of Mining and Technology
- 11:00 a.m. **Spaceport America Update**
—Christine Anderson, Executive Director, Spaceport Authority
- 12:00 noon **Adjourn**

Revised: October 21, 2011

**TENTATIVE AGENDA
for the
FOURTH MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**October 24-25, 2011
Room 307, State Capitol**

Monday, October 24

- 10:00 a.m. **Call to Order**
—Representative Roberto "Bobby" J. Gonzales, Chair
- 10:05 a.m. **Algal Biofuels**
—Dr. Pete Lammers, Technical Director, Algal Bioenergy Program, Energy
Research Laboratory, New Mexico State University (NMSU)
- 11:00 a.m. **Eastern Loop — a Telecommunications Partnership**
—Shaun Cooper, NMSU
- 12:00 noon **Lunch**
- 1:30 p.m. **Energy Efficiency Potential for Utilities**
—Ken Hughes, Clean Energy Specialist, Energy Conservation and Management
Division, Energy, Minerals and Natural Resources Department
—Keven Groenewold, Executive Vice President and General Manager, New
Mexico Rural Electric Cooperative Association
—Ron Darnell, Vice President for Regulatory Affairs, Public Service Company
of New Mexico
—Steven Bean, Manager, Energy Efficiency Program, Public Service Company
of New Mexico
—Neil Cowan, Xcel Energy
- 3:30 p.m. **Unmanned Aerial Vehicle Program**
—Doug Davis, Deputy Director, Technical Analysis and Applications Center,
NMSU; Director, Global UAS Strategic Initiatives, NMSU
- 5:00 p.m. **Recess**

Tuesday, October 25

- 9:00 a.m. **Australia Smart Grid Video**
—Representative Roberto "Bobby" J. Gonzales, Chair

9:30 a.m. **University of New Mexico Health Sciences Center Research**
—Dr. Richard S. Larson, M.D., University of New Mexico Health Sciences
 Center

10:30 a.m. **Science and Technology Education**
—Dr. Karin Wilburg, Associate Dean for Research, College of Education, NMSU
—Dr. Susan Brown, Director of the STEM Outreach Center, College of
 Education, NMSU

12:00 noon **Lunch**

1:00 p.m. **Los Alamos National Laboratory (LANL) Overview**
—Charles McMillan, Director, LANL

Adjourn

Revised: November 22, 2011

**TENTATIVE AGENDA
for the
FIFTH MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**November 28-29, 2011
Room 307, State Capitol**

Monday, November 28

- 10:00 a.m. **Call to Order**
—Representative Roberto "Bobby" J. Gonzales, Chair
- Sandia National Laboratories Overview**
—Paul Hommert, President, Sandia National Laboratories
- 11:30 a.m. **Lunch**
- 1:00 p.m. **Metal Theft Legislation**
—Leo Baca, Director, State Legislative Affairs, CenturyLink
—Mike Sindelar, Detective, San Juan County Sheriff's Office
—Minda McGonagle, Lobbyist, Responsible Metal Recyclers Initiative
- 2:00 p.m. **Natural Gas as Liquid Fuel**
—Kevin Boberg, Ph.D, Director, Arrowhead Center and Associate Dean, College
 of Business, New Mexico State University (NMSU)
—Kevin Washburn, Dean, University of New Mexico (UNM) School of Law
—Jeffrey Kendall, Dean's Research Fellow and Third-Year Law Student, UNM
- 3:00 p.m. **Renewably Derived Hydrogen Solutions**
—Eric Martinez, Jetstream Wind, Inc.
- 4:00 p.m. **University Affiliated Public Broadcasting**
—Franz Joachim, KNME Director of Content, UNM
—Glen T. Cerny, Executive Director, University Broadcasting, NMSU
- 5:00 p.m. **Recess**

Tuesday, November 29

- 9:00 a.m. **Department of Information Technology (DoIT) Status Report**
—Darryl Ackley, Secretary, DoIT
—Mike Baca, Acting Director of Policy and Planning, DoIT

- 10:00 a.m. **New Mexico Integrated Strategic Broadband Initiative Report**
—Darryl Ackley, Secretary, DoIT
—George Clarke, DoIT
—Richard Lowenberg, 1st-Mile Institute
- 11:00 a.m. **ONGARD, Taxation and Revenue Department (TRD) GenTax System and
Motor Vehicle Division Reengineering Project Status Reports**
—Greg Saunders, Chief Information Officer, TRD
- 12:00 noon **Workforce Solutions Department's Unemployment Insurance Modernization
Information Technology**
—Celina C. Bussey, Secretary of Workforce Solutions
—Aaron Hinds, Chief Information Officer, Workforce Solutions Department
- 1:00 p.m. **Adjourn**

Minutes

**MINUTES
of the
FIRST MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**June 10, 2011
Room 307, State Capitol**

The first meeting of the Science, Technology and Telecommunications Committee was called to order at 10:10 a.m. on Friday, June 10, 2011, in Room 307 of the State Capitol by Representative Roberto "Bobby" J. Gonzales, chair.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair
Sen. Stephen H. Fischmann, Vice Chair
Rep. Cathrynn N. Brown (by telephone)
Sen. William F. Burt
Sen. Dede Feldman
Sen. Phil A. Griego
Rep. Jim W. Hall
Rep. Conrad D. James
Sen. Linda M. Lopez
Sen. Steven P. Neville
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. James E. Smith
Rep. Luciano "Lucky" Varela

Absent

Advisory Members

Sen. Carlos R. Cisneros
Rep. Ben Lujan
Sen. Richard C. Martinez
Rep. Danice Picraux
Rep. Jane E. Powdrell-Culbert
Rep. Richard D. Vigil

Rep. Ray Begaye
Sen. Mark Boitano
Sen. William H. Payne
Sen. John M. Sapien
Rep. Don L. Tripp

Staff

Gordon Meeks
Ralph Vincent
Carmella Casados
Jeret Fleetwood

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file.

Friday, June 10

The committee observed a moment of silence in honor of Representative Jeannette O. Wallace, who passed away recently.

The chair then recognized Representative Hall, who was recently appointed to fill the vacancy left by Representative Wallace. Representative Hall noted that he had worked with Representative Wallace many times in the past and is honored to be serving in her place.

Other members of the committee also introduced themselves.

Interim Committee Protocols

John Yaeger, assistant director for legislative affairs, Legislative Council Service, provided the committee with an overview of interim committee protocols. He began by discussing establishment of a quorum for committees, pointing out that the Science, Technology and Telecommunications Committee needs eight voting members to establish a quorum. Mr. Yaeger noted that committees that do not have a voting quorum present may still operate as a special subcommittee for the purpose of taking testimony.

Mr. Yaeger went on to discuss the provision that allows a majority of members from one house to block the actions of another house. However, he pointed out that interim committees often perform actions by consensus, making blocking unnecessary.

Mr. Yaeger discussed travel by interim committees. He explained that the New Mexico Legislative Council would allow interim committees to meet outside of Santa Fe during the 2011 interim, but only during July and August. He reminded the committee that a special session on redistricting is anticipated for September. Mr. Yaeger also reminded the committee that the legislative council requires interim committees to finish their work by December 1.

Department of Information Technology

Darryl Ackley, secretary of information technology, provided the committee with testimony regarding the Department of Information Technology (DOIT) and his vision for it. He began by explaining that he came to the department from the cybersecurity program at the New Mexico Institute of Mining and Technology, and that he is a computer scientist by training.

Secretary Ackley went on to discuss the DOIT's history and primary functions, explaining that the department houses the State Data Center and provides telecommunication services for state agencies. He also noted that the department reviews all major information technology purchases by state agencies. Secretary Ackley went on to point out that the Information Technology Commission provides some external oversight of the department.

Questions and comments from committee members included:

- the number of members and recent appointments to the Information Technology Commission;
- warranties and other protections afforded to state agencies when purchasing information technology products;
- the status of plans to consolidate the DOIT and the General Services Department;
- user responsibilities compared to vendor failures;
- the status of various DOIT projects;
- school districts failing to use their taxation authority in order to fund information technology;
- efforts by the DOIT to implement legislation expanding the transparency of state government, including increasing the data available on the sunshine portal; and
- improvements and other issues associated with the SHARE Program.

Several members of the committee also expressed concern regarding information technology contracts that did not meet the state's expectations or exceeded anticipated costs. They emphasized that the department should carefully examine contracts to avoid having to come before the legislature to ask for additional funding.

Work Plan and Meeting Dates

The committee added the following topics to its work plan:

- supercomputer status;
- public and higher education information technology issues;
- e-learning and distance learning; and
- public broadcasting.

There being no further business, the committee adjourned at 12:15 p.m.

**MINUTES
of the
SECOND MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**July 21, 2011
Room 307, State Capitol
Santa Fe**

**July 22, 2011
Fuller Lodge
Los Alamos**

The second meeting of the Science, Technology and Telecommunications Committee was called to order at 10:00 a.m. on Thursday, July 21, 2011, in Room 307 of the State Capitol by Representative Roberto "Bobby" J. Gonzales, chair.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair
Rep. Cathrynn N. Brown
Sen. William F. Burt
Sen. Dede Feldman (July 21)
Sen. Phil A. Griego (July 21)
Rep. Conrad D. James
Sen. Linda M. Lopez
Rep. Debbie A. Rodella (July 22)
Rep. Nick L. Salazar
Rep. James E. Smith (July 22)
Rep. Luciano "Lucky" Varela

Absent

Sen. Stephen H. Fischmann, Vice Chair
Rep. Jim Hall
Sen. Steven P. Neville

Advisory Members

Sen. William H. Payne (July 22)
Rep. Jane E. Powdrell-Culbert (July 22)
Rep. Don L. Tripp

Rep. Ray Begaye
Sen. Mark Boitano
Sen. Carlos R. Cisneros
Rep. Ben Lujan
Sen. Richard C. Martinez
Rep. Danice Picraux
Sen. John M. Sapien
Rep. Richard D. Vigil

(Attendance dates are noted for those members not present for the entire meeting.)

Staff

Gordon Meeks
Ralph Vincent
Carmella Casados
Jeret Fleetwood

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file.

Thursday, July 21

After introductions, the committee received testimony.

Telecommunications Regulatory Reform

Leo Baca and Loretta Armenta, representing CenturyLink (Qwest), spoke to the committee about previous legislation on telecommunications deregulation and recovering costs of relocating lines when required by local governments. Two previous bills endorsed by the committee were presented, and the presenters indicated that they would be seeking support again for this legislation. They told the committee that current policy is based on a law enacted in 1985, when competition was not like the current situation. They said that competition exists for local telephone service from wireless providers, voice-over-internet-protocol providers, cable telephone and other wireline providers. Between 2000 and 2010, Qwest access line counts have decreased from 883,000 to 542,000, a 39 percent decrease. During that same time, they said that New Mexico's population has increased 13 percent from 1,819,000 to 2,059,000. While competition in some areas may be more pronounced than in others, there is effective competition in every Qwest New Mexico service area, they said. They said that CenturyLink will request the Public Regulation Commission (PRC) to determine effective competition and establish regulatory parity with existing competitive local exchange carriers on retail pricing and service quality. They said that other significant competitors, such as like cable telephone and wireless, remain unregulated by the PRC.

Mr. Baca and Ms. Armenta also asked for support of revisions to law dealing with metal theft and reported on Qwest's experience with thefts. They asked for new legislation to limit cash transactions so that a secondary metal recycling agent may not pay cash for a purchase of metal in excess of \$100 (or lower). They said that limiting the cash payment in a salvage transaction will have a deterrent effect. Also, defining "single transactions" as any sale by the same seller in a 72-hour period would ensure that an individual does not make multiple small sales in a single day to avoid triggering the "no cash" requirement. Requirements for mailing checks to a physical address provided by the seller would ensure that sellers provide legitimate addresses to the salvage yard, thus giving law enforcement a better opportunity to identify and locate thieves.

Finally, they suggested inclusion of a provision prohibiting a secondary recycling agent from purchasing or otherwise receiving metallic wire that was burned in whole or in part to remove

insulation unless the recycling agent receives from the seller written evidence indicating that the wire was lawfully burned.

The committee questioned the presenters on and discussed:

- local government approvals of subdivisions without wireline telephone service;
- methods of identification of metal wire for theft prevention;
- the value of copper line losses across all industries and jurisdictions within the state;
- proposed legislation for wire theft prevention;
- a comparison of New Mexico telecommunications regulations to the other 14 states where Qwest/CenturyLink operates;
- the reporting of copper line thefts;
- requirements for metal salvage business licenses;
- gross receipts tax liability of metal sellers;
- the role of the Regulation and Licensing Department over metal salvage businesses;
- Criminal Code provisions for accepting stolen metal;
- the status of Qwest's broadband internet service to Pecos; and
- requirements of recyclers to hold metal for a minimum time period.

Rural Universal Service Support and Long-Distance Interconnections

Sam Ray, John Francis and Jeremy Graves with the New Mexico Exchange Carrier Group spoke to the committee about Federal Communications Commission (FCC) proposed new rules that would place broadband network investments and operations of rural telecommunications companies at risk, to the detriment of rural consumers and small businesses in New Mexico, and intermittent reception of long-distance calls through least-cost telecommunications providers. They testified that the FCC proposes to reduce support from the Universal Service Fund for rural companies and redistribute those resources to companies that have not made comparable investments into the fund in rural America. This approach may reach unserved customers of the larger companies but would make existing network investments of rural telecommunications companies and cooperatives unsustainable.

They also discussed the problem of many long-distance calls not being completed and how this is caused by least-cost routing ("looping") by long-distance call services, not by the local providers that can do little to address the problem. They asked the committee's support for urging the FCC to expedite its investigation into this issue regarding incoming calls being terminated in rural areas.

The committee approved a motion to send a letter to the FCC requesting an expedited action by the FCC to enforce existing regulations that address the issue.

The committee asked about and discussed:

- Western New Mexico Telephone Company's broadband service;
- the status of Qwest interconnections;
- the location of different service providers;
- the process of instituting franchise agreements and permitting rights of way for service;

- the best course of action to expedite a solution to the dropped call problem;
- noncompliance by long-distance providers of the FCC laws requiring fulfillment of service;
- potential cell phone circumvention;
- differentiation of the problem between the "looping" issue or refusal by long-distance providers to complete calls to higher-cost service areas;
- methods to trace the route of each long-distance call;
- the potential for legislation;
- the October 2010 situation that triggered the escalation of dropped calls; and
- how some carriers emphasize quality over price.

Electric Power Transmission and Distribution Developments

Mike Hightower, Sandia National Laboratories, described the major electric power components and the implications of a projected 50 percent increase in power demand in the United States. He said that eastern New Mexico is located where all three large national power grids converge. He said there has been a recent exaggeration about transmission line development in the southwest, as it does not necessarily reflect the reality of expected energy and transmission development. He also discussed smart grid initiatives and utility interests and drivers. The eastern, western and Texas power grids are in different electric "phases" that present some significant technical challenges to integration of these grids, which the Tres Amigas project near Clovis is proposing to accomplish and which will cost billions of dollars to complete. Of the 20 major transmission projects publicized in the southwest, only about 10 percent of them are cost-effective and economically feasible and will be built. Developers of electric power generation and transmission projects in New Mexico are eyeing markets in Arizona, California and Utah. Stated policy in California is to derive all its electric power needs from in state, so Arizona and Utah are the only realistic markets for New Mexico energy exports, he said. He said that the Centennial West Clean Line is the only proposed transmission line in New Mexico that the Western Energy Coordinating Council considers to be cost-effective. He said that power generation requires a lot of water, which New Mexico does not have.

Mr. Hightower said that smart grid and smart metering may improve communications of electric power components, thereby increasing electric efficiency. This would imply that more transmission may not be necessary if consumption rates are reduced by upgrades to distribution and generation systems. He said that other problems are on the horizon, such as securing utility data from hacking. If utilities incorporate smart systems to manage individual appliances in customer locations, the amount of data will increase exponentially and turn the utilities into data management concerns more than electric service enterprises. The utility companies would prefer not to be overwhelmed by this data management challenge, so smart grid nodes or system information aggregators will have a place in the wheeling and dealing or power within the local distribution systems. The information technology industry foresees a trillion dollar per year market in electric power management. These smart grid nodes will allow generation and distribution of electric power to "bundled" locations. He concluded his remarks by saying that the federal Department of Energy will be showing more interest in the future in microgrids and distributed generation systems.

Questions and comments from the committee addressed:

- the potential for Arizona and Utah to supply their own energy load demands;
- Tres Amigas' plan to convert each of the grids into direct current electricity;
- the power losses in transmission over long distances (a 15 percent to 25 percent loss); and
- direct current efficiency benefits.

New Mexico Renewable Energy Transmission Authority (RETA) Developments

Jeremy Turner, director of the RETA, told the committee that New Mexico is blazing a trail for other western state energy transmission authorities. He began by reviewing the RETA's creation by statute in 2007, explaining that the authority can plan, finance, acquire and own transmission and storage facilities. He also went over the RETA's budget, noting that the authority has enough in its cash balances to keep it funded through fiscal year 2013. Next, Mr. Turner discussed several of the developments being studied in New Mexico, such as the Centennial West Clean Line, Lucky Corridor, Southline Line, High Plains Express and Tres Amigas Superstation. He went on to discuss a study performed by Los Alamos National Laboratory (LANL) that analyzed statewide transmission concepts, economic benefits and cost allocation and subsequent efforts to build projects to address some of the issues raised by the study. Finally, Mr. Turner discussed the RETA's eminent domain power, explaining that while statute provides for the authority's use of eminent domain, the procedures for its use have not been finalized, which the authority is in the process of doing.

Questions and comments from the committee addressed:

- the role of the RETA;
- the financial risk to the state from the RETA projects;
- the use of eminent domain by the RETA;
- the RETA's budget and revenue;
- Bank of America's role as fiscal agent for the RETA;
- the total cost of all the RETA projects (\$10 billion);
- the role of Global Infrastructure Partners;
- the rating of the RETA bonds;
- the failure of High Lonesome Mesa to get investment grade ratings for its bonds;
- ownership of transmission lines by the RETA;
- how much power generated in New Mexico would serve New Mexico customers (none);
- the source of money behind project partners; and
- the cost of converting direct current to alternating current.

New Mexico Computing Applications Center (NMCAC) — Supercomputing (Encanto) Facility Status

Tom Bowles, NMCAC director, said the center was created as a New Mexico nonprofit by the University of New Mexico, New Mexico Institute of Mining and Technology and New Mexico State University regents. The center is a University Research Park and Economic Development Act corporation whose mission is to create well-paying jobs in New Mexico by driving the development of high-tech industries. This is accomplished by coupling the talented

people, natural resources and favorable business environment in New Mexico with the power of world-class high-performance computing. The business plan included becoming self-sustaining after five years. Initial capital of \$14 million was provided by the state for two years of operation. The center has brought new business, grants and initiatives to New Mexico and is supporting strong education and outreach efforts. It is well on the way to becoming self-sustaining, he said.

Questions and comments included:

- that the initial cost of the supercomputer was about \$14 million;
- that the Legislative Finance Committee does not support selling the supercomputer;
- that businesses typically find out about the Encanto facility through its web site;
- that the fee schedule for use of the Encanto facility is competitive, particularly for New Mexico businesses;
- that a program to help small New Mexico businesses has been under development for the past six months;
- long-term funding plans for the Encanto facility; and
- that a gateway in Santa Fe to the LANL supercomputer was set up about two weeks ago.

The committee approved the minutes of the June meeting.

Friday, July 22

Sharon Stover, chair, and Fran Berting, councilwoman, Los Alamos County Council, welcomed the committee to Los Alamos and expressed gratitude to LANL.

LANL Report

Terry Wallace, principal associate director for technology and engineering at LANL, summarized science and engineering activities at LANL. He described the root of the word innovation and said that this is the fundamental story of LANL. LANL has a huge role in the economy of northern New Mexico by employing, directly or indirectly, 10,000 people. He said that LANL encompasses world-class science with a wide range of disciplines. Within its primary defense focus are research programs to counter nuclear terrorism and cyberattacks. Other research areas include human health and solar power. The annual budget ranges from \$700 million to \$800 million in research and development. All LANL programs fall into one of three technology readiness levels: fundamental science; basic science leading to commercialization; and manufacturing. With the exception of pit production, LANL has done no manufacturing.

Mr. Wallace highlighted research in algae as a biofuel. Lipids are essential liquid fuels for transportation. Algae as a potential source for biofuels is close to carbon-neutral. These fuels can be designed to be efficiently manufactured on demand. LANL is researching how to enhance production levels, separate the lipids from solids and manage the byproduct wastes. He said that New Mexico is an ideal location for algae production with a potential to produce seven to nine percent of the country's diesel fuel needs. LANL is conducting research to identify the

best algae strains for the purpose, the acoustic methods of separation of lipids from solids and how to trap the produced carbon dioxide for reuse to achieve a closed loop.

Another area of LANL research Mr. Wallace described is intelligent wind turbines. He explained that wind is an intermittent energy source. Large turbines do not have a long life expectancy because wind turbulence causes "micro" cracks. LANL is researching better material for blade manufacturing with two turbines equipped with sensors that collect data to characterize their reliability problems. Increasing the life cycle of wind turbines can increase efficiency and power.

Mr. Wallace said that LANL's nuclear research is using the lab supercomputer to model reactor life cycles in an effort to find out how to minimize calcium carbonate build up in commercial reactors, which is the primary cause of aging.

The committee asked about and discussed:

- land requirements for algae diesel production;
- new design for nuclear reactors;
- industrial partners of LANL;
- patent ownership and intellectual property;
- research on plants' growth rates;
- electrical energy storage technologies;
- flow cytometry licenses;
- progress on small-scale nuclear reactor technology research;
- computer-designed buildings to reduce energy consumption;
- potential jobs from the algae biofuel industry;
- partnerships with New Mexico universities;
- the use of geothermal energy for the Carlsbad cave and karst building; and
- prospects for fusion energy.

Education and Community Investment Plan

Kurt Steinhaus, community programs officer, LANL, told the committee that the management consortium of LANL (Los Alamos National Security, LLC (LANS)) returns half of its annual profit to New Mexico. He summarized community giving, education outreach and economic development and said that \$3.5 million has been invested in New Mexico, so far, by LANS.

The committee asked about and discussed:

- LANS' relationship with small business development centers;
- the cap on the small business assistance tax credit (10 percent);
- the Brian Sanderoff report on return on investments;
- the retraining of employees displaced by technology;
- northern New Mexico students finding jobs at LANL;
- the lab's relationship with the Pueblo of Santa Clara;
- an overview of the LANL budget, number of employees and contractors;
- the Taos Technology Charter School;

- LANL's relationship with New Mexico educational institutions; and
- Sandia National Laboratories' relationship with Albuquerque's schools.

Information Technology Investments at LANL

Elaine Santantonio, manager of network infrastructure engineering at LANL, told the committee that her biggest challenge is the 1,000 cyberattacks per second targeting LANL's computer network. She said that most infections come from email. LANL networks have to be absolutely secure because top-secret research is conducted there. She said that LANL has been successful at attracting top-level talent and expertise to design its security system. LANL must maintain continuity of operations 24 hours a day. The extreme cold spell during the winter of 2011 caused a shutdown of data centers at LANL, and the Las Conchas fire also shut down the lab for six days. She said that LANL is consolidating its computer network into one central computer site for efficiency and security.

Committee questions and discussion addressed:

- the definition of "center of excellence";
- fiber optic access to LANL and rights of way;
- the impact of 9/11 on LANL internet access;
- partnerships with industry;
- the partnership with national security agencies in Washington;
- indicators of security breaches;
- the need to inspect every data packet;
- 24 hours per day, seven days per week monitoring;
- malicious employees; and
- expertise at the New Mexico Institute of Mining and Technology.

The meeting adjourned at 11:25 a.m.

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

September 1, 2011
Science and Technology Center, University of New Mexico
Albuquerque

September 2, 2011
New Mexico Institute of Mining and Technology
Socorro

The third meeting of the Science, Technology and Telecommunications Committee was called to order at 9:00 a.m. on Thursday, September 1, 2011, in the Science and Technology Center at the University of New Mexico (UNM) by Representative Roberto "Bobby" J. Gonzales, chair.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair
Sen. Stephen H. Fischmann, Vice Chair
Rep. Cathrynn N. Brown
Sen. William F. Burt
Sen. Dede Feldman (Sept. 1)
Rep. Jim W. Hall
Rep. Conrad D. James (Sept. 1)
Sen. Linda M. Lopez
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. Luciano "Lucky" Varela

Absent

Sen. Phil A. Griego
Sen. Steven P. Neville
Rep. James E. Smith

Advisory Members

Rep. Ray Begaye
Sen. Carlos R. Cisneros
Sen. Richard C. Martinez
Rep. Jane E. Powdrell-Culbert
Rep. Don L. Tripp

Sen. Mark Boitano
Rep. Ben Lujan
Sen. William H. Payne
Rep. Danice Picraux
Sen. John M. Sapien
Rep. Richard D. Vigil

Guest Legislators

Sen. Rod Adair (Sept. 1)
Sen. Nancy Rodriguez (Sept. 2)

(Attendance dates are noted for those members not present for the entire meeting.)

Staff

Gordon Meeks
Ralph Vincent
Jeret Fleetwood

Guests

The guest list is in the original meeting file.

Handouts

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

Thursday, September 1

Members of the committee introduced themselves to the audience.

Chaouki T. Abdallah, interim provost and executive vice president for UNM, welcomed the committee members to UNM and thanked them for coming. He went on to provide members with an overview of some of the programs and research projects under way at the school.

Questions and comments from the committee included:

- trends in graduation rates of engineering students;
- success rates of math and science scholarship recipients;
- science and math degree matriculations for minority students;
- exchange student populations;
- the wisdom of selling the state's supercomputer, especially since only a small percentage of the original cost would likely be recovered; and
- parallel computing capabilities of UNM computers.

Sam Ray, lobbyist for the New Mexico Exchange Carrier Group, provided the committee with a copy of a letter endorsed by the committee during its last meeting regarding concerns over the potentially adverse impact of the Federal Communications Commission's proposed National Broadband Plan, particularly with regard to proposed reductions in the amount of support provided to rural carriers under the Universal Service Fund high-cost support program. He explained that such a reduction could result in large rate increases and possible elimination of services for rural New Mexico customers.

Sustained Research Initiatives

Julie E. Fulghum, vice president for research and economic development at UNM, provided the committee with an overview of some of the research initiatives under way at the school. She began by discussing the Center for High Technology Materials (CHTM), explaining that one of the center's main objectives is to enhance interaction among UNM, the federal laboratories in New Mexico and industries in the state in order help promote economic development. Ms. Fulghum went on to note that the center focuses on research and education in

photonics, microelectronics and nanoscience. She also pointed out that much of the funding for the center comes from the federal government, with a significant portion coming from industry.

Mary Jo Daniel, associate director for the New Mexico Experimental Program to Stimulate Competitive Research (EPSCoR), explained that there is a \$15 million, five-year grant from the National Science Foundation to help increase New Mexico's capacity to become competitive in seeking research funding. She noted that some of the projects the program is involved with include work on climate observation networks and studies on the relationship between acequias and socioeconomics.

Questions and comments from the committee included:

- the value of encouraging schoolchildren to get involved in science and math programs and to seek degrees in those fields;
- ways the legislature can help programs such as the CHTM and EPSCoR;
- that UNM does not have much of a commitment to riskier programs that, although likely to fail, could also turn into massive projects, similar to the way Los Alamos National Laboratory funds such experimental programs;
- difficulty in recruiting and retaining good science and math teachers; and
- the potential return on initial investments in math, science and technology education.

Distance Learning Program

Debby Knotts, director for new media and extended learning at UNM, and John Cornish, director for curriculum planning and program development at UNM, provided the committee with an overview of the distance learning programs available through UNM. They began by noting the dramatic spike in online course enrollment over the past decade and explained what types of students typically enroll in online or distance learning courses. Ms. Knotts and Mr. Cornish also provided the committee with maps showing the geographic disbursement of online course students and graduates. Finally, they detailed the distance learning infrastructure as it currently exists, as well as expansion plans.

Questions and comments from the committee included:

- how online course offerings are chosen and whether those offerings meet the demands of students;
- the availability of two-way communication in some online courses;
- that online courses are available to anyone wishing to enroll in them;
- potential problems with academic fraud in online courses;
- that graduation rates for online course students are good, but should improve over time; and
- that the cost of online courses is relatively inexpensive.

Broadband

Gil Gonzales, chief information officer for UNM, provided the committee with an overview of broadband internet issues. He began by explaining the growing need of the average

household for faster internet speeds to carry increasingly larger amounts of data. Mr. Gonzales went on to discuss broadband speeds worldwide, pointing out that the United States ranks only twenty-second in the world in average measured connection speed. He also noted that here in the United States, New Mexico's average connection speed ranks fifth slowest. Mr. Gonzales went on to discuss efforts to make broadband service cheaper and more available in other countries and here in the United States. He also noted that the cost of broadband connectivity, particularly at the high end, is somewhat more expensive in the United States as compared to other countries.

Questions and comments from the committee included:

- the Wired New Mexico Initiative;
- how public institutions in New Mexico tend to have lots of bandwidth, while private individuals and businesses tend to lack bandwidth;
- the use of wireless phone hotspots for internet connectivity;
- whether the legislature can help with negotiations with utility and broadband providers in clearing some of the obstacles in the way of increased broadband availability;
- the increasing importance of having broadband internet connections for households; and
- that spectrum use is also an issue that needs to be resolved.

Sandia National Laboratories Research Highlights

Jerry Simmons, Science, Technology and Engineering Innovations and Partnerships at Sandia National Laboratories (SNL), provided the committee with testimony regarding several of the research projects under way at SNL. He began by providing the committee with an overview of work performed at SNL, explaining that it is a multiprogram laboratory performing research on a vast number of subjects. Mr. Simmons went on to note that one major focus of SNL is new energy technology, and he provided the committee with several examples of advances and products pioneered by SNL. He also discussed SNL's work in national security research, including counterterrorism, infrastructure surety and cybersecurity programs. Mr. Simmons also discussed some of the health care research on which SNL has been working, as well as some of the economic development programs with which SNL is involved.

Questions and comments from the committee included:

- that about 10,000 employees work at SNL;
- while there has been some talk about cutting the budgets at both national laboratories in New Mexico, it is too early to know what will happen;
- levels of assistance provided by SNL for companies deploying new technology developed at SNL;
- that new cancer treatments developed at SNL have not yet been tested on humans;
- the role the legislature can play in ensuring that both national laboratories continue to grow; and
- SNL employees who leave to work on start-up companies returning to work at SNL.

E-911 Legislation

Paul Gutierrez, executive director for the New Mexico Association of Counties (NMAC), provided the committee with testimony regarding legislation that added a surcharge to voice over internet protocol (VOIP) and prepaid wireless phones to be used to help fund the E-911 system in New Mexico. He explained that bills were introduced and passed during the 2011 regular session addressing the issue, but that they were vetoed. Mr. Gutierrez explained that aging equipment at the 52 public safety answering points (PSAPs), where 911 calls are answered, will likely cause increased PSAP downtime and longer repair times if the Enhanced 911 Fund is not maintained or even increased. He also noted that the governor's veto message indicated that now is not the time to raise taxes or fees, but explained that the NMAC is currently working with the Governor's Office to develop legislation that she will sign.

Questions and comments from the committee included:

- the Enhanced 911 Fund supports local and state PSAPs;
- the Enhanced 911 Fund covers the cost of answering emergency calls, but calls to police and emergency vehicle dispatchers are not covered;
- jurisdictional issues between the Rio Arriba County and Santa Fe County PSAPs regarding calls in Espanola, which straddles both counties;
- funding levels for the Enhanced 911 Fund dipped recently, but are beginning to level out; and
- decreasing relevance of traditional landline phones.

The minutes of the July 21, 2011 meeting of the committee were approved as submitted.

Friday, September 2

Dr. Dan Lopez, president of the New Mexico Institute of Mining and Technology (NMIMT), welcomed committee members to the campus and thanked them for coming. He provided the committee with a brief update on operations at the school, noting that faculty cuts have become an issue. Dr. Lopez indicated that as faculty levels continue to drop, accreditation may become a problem. He indicated that state leaders will face some difficult choices in coming years.

Big Science at the NMIMT

Van D. Romero, vice president for research and economic development at NMIMT, provided the committee with testimony regarding several of the ongoing projects at the school. He began with a brief history of some of the work performed by the school during World War II and afterward, which led to much of the explosives and terrorism research that the school does, particularly at its Playas, New Mexico, facility. Dr. Romero went on to explain that some of the other work done at the school includes:

- tracking asteroids and low-earth orbit objects;
- oil and gas mining research;

- produced water;
- novel metalworking technology;
- infrastructure protection; and
- hydrology.

Dr. Romero also discussed the value of a degree from NMIMT, pointing out that the school is listed among the top 20 Ph.D.-producing schools in the country, and that students from the school can earn significantly higher starting and mid-career salaries as compared to other schools.

Questions and comments from the committee included:

- the loss of some federal money may put some projects in jeopardy;
- that NMIMT is connected to New Mexico's supercomputing facility;
- while New Mexico may no longer need the supercomputer, it is still an extremely useful research tool;
- the number of Ph.D.s from NMIMT currently employed at the two national laboratories in New Mexico;
- the potential of getting potable water from oil and gas fracking fluid; and
- work the school could do to help prevent suicides at the Rio Grande Gorge bridge.

Cybersecurity

Srinivas Mukkamala, senior research scientist for the Institute for Complex Additive Systems Analysis, NMIMT, provided the committee with an overview of the cybersecurity program at NMIMT. He began with a brief history of the program, then discussed how it has grown into both a degree program at the school and a private consulting company. Mr. Mukkamala noted that the company has made about \$2 million from its patents. He also discussed various clients the company has had, noting that they have helped with several major litigation cases in New Mexico. Mr. Mukkamala also pointed out that New Mexico is one of only six states that does not have cybersecurity laws on the books. Finally, he discussed various kinds of cyberattacks, noting the distinction between random and targeted ones.

Questions and comments from the committee included:

- the value of being well-educated and proactive in cybersecurity matters;
- the private company created by Mr. Mukkamala is outperforming competition from larger companies, such as IBM;
- cybersecurity work done for major stock exchanges in the world;
- no legal authority exists to be able to counterattack those who commit cyberattacks;
- the importance of keeping personal information off of smartphones, which are not very secure;
- border security and cybersecurity issues; and
- the difficulty in finding appropriate candidates for cybersecurity degrees and careers.

Staff was also directed to begin developing cybersecurity legislation for the committee to consider endorsing.

Spaceport America Update

Christine Anderson, executive director of the Spaceport Authority, provided the committee with an update on the spaceport. She discussed the spaceport's budget, bond status, future business plan and jobs in and around the spaceport. Ms. Anderson noted the difference between current jobs at the spaceport, which are mostly construction-related, and future ones, which will range from protective services and hospitality to Virgin Galactic operations.

Questions and comments from the committee included:

- who will be in charge of long-term operations at the spaceport is still being resolved;
- New Mexico will continue to own the spaceport property;
- vertical and horizontal launches are planned; and
- the Spaceport Authority Board is appointed by the governor.

There being no further business, the committee adjourned at 1:48 p.m.

**MINUTES
of the
FOURTH MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**October 24-25, 2011
Room 307, State Capitol**

The fourth meeting of the Science, Technology and Telecommunications Committee (STTC) was called to order at 10:10 a.m. on Monday, October 24, 2011, in Room 307 of the State Capitol in Santa Fe by Representative Roberto "Bobby" J. Gonzales, chair.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair
Sen. Stephen H. Fischmann, Vice Chair
Sen. William F. Burt
Sen. Dede Feldman (Oct. 24)
Sen. Phil A. Griego
Rep. Jim W. Hall
Rep. Conrad D. James
Sen. Linda M. Lopez
Sen. Steven P. Neville
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. Luciano "Lucky" Varela

Absent

Rep. Cathrynn N. Brown
Rep. James E. Smith

Advisory Members

Rep. Ray Begaye
Rep. Ben Lujan (Oct. 25)
Sen. Richard C. Martinez
Rep. Danice Picraux
Rep. Jane E. Powdrell-Culbert
Rep. Richard D. Vigil (Oct. 25)

Sen. Mark Boitano
Sen. Carlos R. Cisneros
Sen. William H. Payne
Sen. John M. Sapien
Rep. Don L. Tripp

(Attendance dates are noted for those members not present for the entire meeting.)

Staff

Gordon Meeks
Ralph Vincent
Jeret Fleetwood

Guests

The guest list is in the original meeting file.

Handouts

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

Monday, October 24

Algal Biofuels

Dr. Pete Lammers, technical director for the algal bioenergy program at the Energy Research Laboratory for New Mexico State University (NMSU), provided the committee with testimony regarding research that the university has been conducting into the production of diesel fuel from algae. He began by providing the committee with a brief history of the research conducted so far, indicating a significant advantage of using algae over other agricultural products to produce biodiesel in an economically viable manner. Dr. Lammers went on to detail the economics of producing biodiesel from algae, noting that capturing value from all of the components of algae is the key to making it all work. Finally, Dr. Lammers discussed New Mexico's role in biodiesel production from algae, explaining that research shows that New Mexico is well-positioned in terms of available land and sunshine, both critical components in the production process.

Questions and comments from the committee included:

- use of algae byproducts of biodiesel production for animal feed and some water filtration applications;
- potential sites for large-scale algae production;
- patent requirements for the algae to biofuel process;
- international research that might undermine U.S. patents;
- water rights issues and the use of brackish water in algae production;
- potential development of statutes regarding genetically modified organisms; and
- development of a demonstration site to begin training future employees in the biodiesel production industry.

Eastern Loop — A Telecommunications Partnership

Shaun Cooper, NMSU, provided the committee with an overview of the Eastern Loop, a part of the Wire New Mexico project, which is a master plan for communications infrastructure in New Mexico. He explained that the Eastern Loop is actually part of the second phase of the Wire New Mexico project and is being carried out via a partnership among Eastern New Mexico Rural Telephone Cooperative, Baca Valley Telephone, Delcom, New Mexico Institute of Mining and Technology and NMSU. Mr. Cooper went on to note that the partnership involves the exchange of assets and detailed the benefits to each entity involved in the partnership. He went on to acknowledge some of the challenges to the project, particularly regarding ownership and administration of the network and cost-sharing. Mr. Cooper also pointed out that most of the Wire New Mexico project is funded by the federal American Reinvestment and Recovery Act of 2009 (ARRA). Finally, he outlined several areas of the state that will next become part of the network through the project.

Questions and comments from the committee included:

- fiber-optic cable in northeastern New Mexico;
- the impact of increased mobile phone data usage on New Mexico's networks;
- that new homes in New Mexico are sometimes built for connectivity, but not always;
- costs borne by the private sector and the effect on competition among private telecommunications companies;
- microwave technology does not really figure into the Wire New Mexico project;
- border connectivity and national security issues;
- problems with underground fiber-optic lines being inadvertently cut by backhoe operators; and
- connectivity in the west central part of New Mexico.

Energy Efficiency Potential for Utilities

Ken Hughes, clean energy specialist, Energy Conservation and Management Division, Energy, Minerals and Natural Resources Department, provided the committee members with copies of "Energy Efficiency Potential Study for the State of New Mexico", prepared by Global Energy Partners. His division contracted with Global Energy Partners to conduct this statewide study of energy efficiency and demand-response market potential to address utility-level programs in the state. The funding for this project came through the ARRA. The Efficient Use of Energy Act directs New Mexico to support public utilities' development of all cost-effective energy efficiency and load management measures under rules of the Public Regulation Commission (PRC). The various utilities under PRC jurisdiction must obtain PRC approval of energy efficiency programs, implement those programs and report their results and costs. The objectives of this study were to:

- determine the potential for specific energy efficiency measures to reduce the consumption of natural gas and electricity by regions in New Mexico;
- conduct a statewide study of demand-response potential to determine the potential for reduction in peak demand through demand-response programs;
- identify energy efficiency measures that meet the total resource cost test;
- analyze various market penetration rates associated with technical, economic and achievable potential estimates;
- describe and quantify the strategies for implementing those measures in a manner that produces the maximum achievable energy savings;
- run scenarios based on three levels of avoided costs; and
- provide information to the public.

The study found there were nearly one million electricity users in the state in 2009 that consumed 21 trillion watt-hours of electricity. The residential sector, made up of about 850,000 customers, used about 31% of the total; the commercial sector is the largest user, with about eight trillion watt-hours (38% of the total); and the industrial sector's use is almost equivalent to the residential sector. The sum system peak for the entities in the state was about 4,000 megawatts in 2009.

Keven Groenewold, executive vice president and general manager, New Mexico Rural Electric Cooperative Association, provided the committee with testimony regarding energy

efficiency from the point of view of rural electric cooperatives. He explained that the Tri-State Generation and Transmission Association has retained a company to help it identify and characterize cost-effective energy efficiency measures, and he discussed several of those potential measures and the energy savings they might yield.

Ron Darnell, vice president for regulatory affairs, Public Service Company of New Mexico (PNM), also discussed energy efficiency for utilities. He began by providing the committee with an overview of PNM's various energy efficiency programs. Mr. Darnell also discussed the Efficient Use of Energy Act, which established minimum program targets for utilities. He noted that PNM is on target to meet the 2014 goal, but he cautioned that continued targets will be more difficult to meet. For example, Mr. Darnell noted that there is little long-term certainty since passage of the Efficient Use of Energy Act, as well as little support for structural changes, such as rate decoupling, that would help utility companies keep energy efficiency programs cost-effective.

Neil Cowan, Xcel Energy, also discussed energy efficiency. He began by providing the committee with an overview of Xcel Energy's residential and business energy efficiency programs. Mr. Cowan went on to show the committee the steadily increasing energy savings required by the Efficient Use of Energy Act versus projections of what Xcel Energy will likely be able to achieve. He also noted that Xcel Energy has begun a study to verify the company's ability to achieve the goals laid out in the Efficient Use of Energy Act and to provide cost estimates for future planning.

Questions and comments from the committee included:

- the difficulty that energy consumers have in understanding the basics of energy efficiency and how it may, or may not, save them money;
- long-term benefits of energy efficiency are significant, but initial costs to utility companies are, too;
- utility bills seem difficult to read for the average consumer;
- utility company and electric cooperative payment of governmental gross receipts taxes; and
- why utility companies want consumers to pay for their lost sales.

Unmanned Aerial Vehicle Program

Doug Davis, deputy director, Technical Analysis and Applications Center, NMSU, provided the committee with testimony regarding NMSU's Physical Science Laboratory (PSL) and its mission and history. He explained that the laboratory was established in 1946 to support missile testing of V-2 rockets and that it continues to conduct multidisciplinary aerospace and defense-oriented scientific and technical research. Mr. Davis noted that one of the main goals for the PSL is to become a global center of influence for unmanned aircraft operations and technology, and he discussed some of the unmanned aircraft work that the PSL is doing. He noted that unmanned aircraft includes both scientific balloons as well as other unmanned aircraft systems (UAS) and that NMSU has developed a flight test center (FTC) for UAS, which enables manufacturers, government agencies and other users to conduct operations as public aircraft.

Mr. Davis explained that the FTC is adjacent to White Sands Missile Range's core airspace and offers a number of desirable features, such as available airspace, good weather and U.S. Air Force air traffic control from surface to space. He also discussed some of the past and present projects that the FTC has hosted and his vision for continuing to improve the FTC to make it the premier facility for unmanned aerial vehicles.

Questions and comments from the committee included:

- increased support from local, state and federal government entities would be helpful in improving the FTC's chances of continuing to improve;
- agreements with companies allow them to set up temporary hangars in remote areas of the FTC to keep proprietary information and designs private;
- issues related to municipal ownership of most area airports can be resolved;
- significant amounts of state and Bureau of Land Management land near the FTC constitute another potential advantage that the FTC enjoys;
- the New Mexico congressional delegation is generally supportive of the FTC, but it does not seem to be a priority for the delegation;
- the importance of the federal Department of Defense and testing unmanned aerial vehicles to the economy of southern New Mexico; and
- initial difficulties faced by the spaceport were eventually overcome.

The committee directed staff to prepare letters to the New Mexico congressional delegation and Commissioner of Public Lands Ray Powell urging them to support the FTC.

The committee also directed staff to draft a memorial supporting the FTC.

On a motion made, seconded and approved, the minutes of the STTC's September 1-2, 2011 meeting were approved as submitted.

Tuesday, October 25

Australia Smart Grid Video

Representative Gonzales presented a video that he came across at the Council of State Governments-West conference earlier in the year. The video discussed broadband and smart grid issues in Australia and showed how increased broadband connectivity could improve the home and professional lives of each member of an Australian household.

University of New Mexico (UNM) Health Sciences Center Research

Dr. Richard S. Larson, UNM Health Sciences Center, provided the committee with testimony regarding the research mission at UNM's medical school. He explained that his vision is to create a research enterprise that accelerates the process from basic discovery to application in medical health care practice. Dr. Larson went on to note that the university has already created signature programs in:

- brain and behavioral illnesses;

- cardiovascular and metabolic diseases;
- infectious diseases and immunity;
- environmental health sciences;
- child health research; and
- cancer.

Dr. Larson also discussed clinical and intervention trials, which bring the latest treatments and technologies to New Mexico, and listed several trials in which the university had taken part. He also talked about the importance of community engagement and research, noting that increasing knowledge and coordination in the community will increase access to health care and likely lead to significant scientific advances.

Next, Dr. Larson discussed pilot funding for programs, which he explained is the primary mechanism for obtaining federal support. He also pointed out that pilot funding returns between \$8.00 and \$20.00 for every \$1.00 invested. However, Dr. Larson acknowledged that state funding has become increasingly scarce over the last decade, noting that core programs have been forced to absorb continued budget cuts.

Questions and comments from the committee included:

- gene evaluation technology can be used to detect illnesses in children, but it also poses some ethical questions;
- clinical trials seem to have produced some drugs that, although well-intentioned, produce significant and problematic side effects;
- whether anything can be done once abnormal or problematic genes have been detected;
- values and difficulties of public-private partnerships;
- finding a niche is one key to obtaining a competitive advantage for research funding; and
- privacy issues associated with medicines and their side effects.

Science and Technology Education

Dr. Karin Wilburg, associate dean for research, College of Education, NMSU, and Dr. Susan Brown, director of the STEM Outreach Center, College of Education, NMSU, provided the committee with testimony regarding science and technology education in New Mexico. They began by explaining that STEM is defined as the development of strong science and mathematics knowledge and skills that students learn using engineering and technology as a tool for learning and communication. Dr. Wilburg and Dr. Brown went on to note that the percentage of STEM degrees awarded in the United States has been steadily decreasing while also being outpaced by several other countries. They also discussed why STEM degrees are so important, suggesting that the country's future economic well-being depends on youth trained to work in the twenty-first century. Dr. Wilburg and Dr. Brown then discussed a number of reasons for the decline in STEM degrees and outlined a number of programs in New Mexico schools that appear to encourage students at all levels to pursue STEM education.

Questions and comments from the committee included:

- that teachers play a key role in helping students get excited about STEM education;
- the retention of STEM teachers is just as troubling an issue as the recruitment of them;
- the importance of STEM education for all students at all educational levels;
- the importance of parental support;
- the difficulty teachers seem to have in finding time to work with students on basic science and math skills;
- the tendency of teachers to teach for test results, as opposed to basic skills development; and
- the need for an overall paradigm shift in education.

Los Alamos National Laboratory (LANL) Overview

Charles McMillan, director, LANL, provided the committee with an update regarding laboratory functions and answers to specific questions posed by committee members at an earlier meeting. He talked about his personal background and went on to discuss some of the work that LANL has conducted over the last year, as well as some of the challenges faced there. Mr. McMillan also provided the committee with some demographic data regarding the laboratory's work force. He also discussed the chemistry and metallurgy research replacement (CMRR) program, which he explained continues LANL's nuclear security missions through analytical chemistry and materials characterization of elements such as plutonium and uranium. Mr. McMillan pointed out that the CMRR program is not a pit-manufacturing (nuclear weapons components) facility.

Mr. McMillan went on to discuss LANL's impact on the northern New Mexico economy, pointing out that the laboratory is exceeding its goals in terms of doing business with local companies whenever possible. He also pointed out that the CMRR program will provide an economic boost to the area, first through construction jobs and later through the purchase of goods and services. Mr. McMillan pointed out that LANL is actually the sixth largest employer in New Mexico.

Next, Mr. McMillan discussed LANL's work force. He explained that the laboratory is working to build a diverse work force and noted that the Onramp and Protege programs provide an avenue from entry-level to management positions at the laboratory. Finally, Mr. McMillan discussed the future of LANL, noting that the laboratory will continue to deliver excellence through science and will compete for talent on a worldwide stage. He also said that LANL will work to build an environment that fosters creativity.

Questions and comments from the committee included:

- although New Mexican students are better educated today, LANL does not hire as many New Mexicans as it should;
- the number of degrees among employees at the laboratory includes some employees who hold multiple degrees;

- specific numbers for enrollment in the Onramp program;
- small business procurement practices;
- the total budget for LANL is \$2.3 billion;
- the possibility of ethnic clusters in pay scales at LANL;
- LANL must compete with other elite organizations and even other countries for employees;
- the focus of the laboratory should be on world-class science and facilities;
- the importance of the CMRR facility to LANL's growth;
- the improvement that LANL has made in its hiring and promotion practices;
- that LANL success is critical to the success of the United States;
- critics of the CMRR program may not fully understand its mission;
- the LANL is trying to meet with community leaders to help explain the CMRR program; and
- the status of environmental cleanup at LANL.

There being no further business, the committee adjourned at 3:00 p.m.

**MINUTES
of the
FIFTH MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE**

**November 28-29, 2011
Room 307, State Capitol**

The fifth meeting of the Science, Technology and Telecommunications Committee (STTC) was called to order by Representative Roberto "Bobby" J. Gonzales, chair, on November 28, 2011 at 10:15 a.m. in Room 307 of the State Capitol.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair
(11/28)
Sen. Stephen H. Fischmann, Vice Chair
Sen. Phil A. Griego
Rep. Jim W. Hall (11/29)
Rep. Conrad D. James
Sen. Linda M. Lopez
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. James E. Smith (11/29)
Rep. Luciano "Lucky" Varela

Absent

Rep. Cathrynn N. Brown
Sen. William F. Burt
Sen. Dede Feldman
Sen. Steven P. Neville

Advisory Members

Rep. Ray Begaye
Sen. Carlos R. Cisneros
Rep. Ben Lujan (11/29)
Sen. Richard C. Martinez
Rep. Danice Picraux
Rep. Jane E. Powdrell-Culbert

Sen. Mark Boitano
Sen. William H. Payne
Sen. John M. Sapien
Rep. Don L. Tripp
Rep. Richard D. Vigil

(Attendance dates are noted for members not present for the entire meeting.)

Guest Legislator

Rep. Thomas A. Anderson

Staff

Gordon Meeks
Jeret Fleetwood
Ralph Vincent
Cassandra Jones

Minutes Approval

These minutes have not been approved by the STTC, as the committee has finished its work for the interim.

Guests

The guest list is in the meeting file.

Monday, November 28

Sandia National Laboratories (SNL) Update

Paul Hommert, president of SNL, told the committee that SNL focuses on mission areas that include nuclear weapons, international security and energy research. Large-scale facilities operated by SNL include the Pete V. Domenici National Security Center and the Center for Integrated Nanotechnologies. SNL has almost 10,000 employees in New Mexico, with a payroll over \$800 million, and 8,750 retired employees. In New Mexico, SNL has spent over \$300 million in contract-related payments, over \$290 million in small business payments and approximately \$100 million in procurement card purchases and other business payments during fiscal year 2011. The Sandia Science and Technology Park is an internationally recognized technology community that was founded in 1998 and consists of 20 facilities with over 2,000 employees.

The Environmental Management Center Opportunities Resource is a publicly traded company that moved to New Mexico in 2006. SNL and its partners have created technology to kill the explosive element in improvised explosive devices. SNL also established an entrepreneurial separation to transfer technology program that allows employees to leave the company to start up or expand technology businesses and guarantees them reinstatement for two years with the option to request a third year. SNL recruits professional staff from across the nation and employed 387 regular hires from New Mexico schools during fiscal year 2011. SNL has signed memoranda of understanding with the University of New Mexico (UNM), New Mexico State University (NMSU) and the New Mexico Institute of Mining and Technology. SNL sponsors several community outreach programs, including: family math and science nights, the New Mexico Hydrogen Fuels Challenge and the National Museum of Nuclear Science and History. The Manos program is designed to introduce math, science and engineering concepts to middle school students. SNL Hispanic technical staff members serve as volunteer instructors. Approximately 120 middle school students participate in the Manos program. Mr. Hommert told the committee that SNL contributes significantly to and is dependent upon the business environment in New Mexico and has established interdependent relationships with the universities in New Mexico.

Committee members discussed the following:

- the managing contractor (government-owned, contractor-operated organization);
- federal budget and funding sources;
- collaboration among SNL, Los Alamos National Laboratory and state universities;
- assistance to rural businesses;
- science and math education internship programs;
- flexibility of federal contracts for technology transfer;
- intellectual property ownership;
- relationships with business incubators;
- scientific publication status;
- work with schools to improve science and math education;
- potential consolidation of the weapons laboratories;
- influence of the New Mexico Legislature in Congress;
- equal opportunity outreach efforts;

- ratio between national defense-related contracts and "other";
- control of the National Nuclear Security Administration (NNSA) over SNL; and
- potential savings of elimination of the NNSA.

Metal Theft Legislation

Leo Baca, director of state legislative affairs for CenturyLink, told the committee that many agencies and industries, including state government and law enforcement, are affected by metal theft in New Mexico. CenturyLink has lost almost \$1 million due to metal theft. The Sale of Recycled Metals Act currently requires that information be provided by the seller for each purchase of metal by a recycler. Consequences for noncompliance are inadequate. Mr. Baca presented draft legislation that would include titanium in regulated materials, require the recycler to take a photograph of the seller and the material, require the recycler to maintain a record of purchase, enhance civil penalties and require that recyclers acquire a license.

Detective Mike Sindelar of the San Juan County Sheriff's Office told the committee that the most effective point of interception for stolen metal materials is at the point of sale. He recommended a database similar to those used by pawn shops to track metal sales in New Mexico. He also suggested the possibility of a user fee in order to fund efforts by the Regulation and Licensing Department to administer the database.

Minda McGonagle, state director for the National Federation of Independent Business, told the committee about www.scrapthefatalert.com, a free tool for law enforcement that is open to the public. Ms. McGonagle told the committee that recyclers in New Mexico are willing to become licensed but are concerned about the possibility of a user fee.

Members of the audience expressed concerns about and support for the draft legislation. Several members of the audience also expressed a need for stricter regulations concerning metal theft and the sale of metal to recyclers. In response to questions from members of the committee, Mr. Baca clarified that the draft legislation is still being revised and is not ready for a committee endorsement.

Committee members discussed the following:

- the authority of the superintendent of regulation and licensing;
- the market for recycled metals;
- a lack of criminal penalties in existing law;
- criminal penalties as a crime deterrent;
- the impact of metal thefts on small businesses in rural areas;
- comparing New Mexico to other states in metal theft crime rates;
- the potential for interruptions of utility service and communications;
- federal authority to prosecute crimes of metal theft (over \$100,000 in value);
- trends in the price of copper, aluminum, bronze, steel and titanium;
- involvement of organized crime;
- the history of fines being collected by the Regulation and Licensing Department;
- disposition of the registration fees;
- information required of recyclers with and without new legislation;
- definition of "regulated material";
- the effect on the environment of penalizing people who pick up junk;
- the threshold separating jewelry theft crime from metal theft;
- pawnbroker statutes; and

- concerns of the Courts, Corrections and Justice Committee about the bill.

Natural Gas as a Liquid Fuel

Kevin Washburn, dean of the UNM School of Law, told the committee that UNM and NMSU had conducted a study to comply with requests made in House Memorial 41 (2011). Jeffrey Kendall, dean's research fellow and a third-year law student at UNM, told the committee that it is unlikely that the use of compressed natural gas (CNG) vehicles would create any issues that are different than those created by oil and gasoline. While there are only limited case studies regarding CNG vehicles, legal issues can be studied by comparing CNG vehicles to propane or gasoline.

Dr. Kevin Boberg, director of the Arrowhead Center and associate dean of the College of Business at NMSU, told the committee that the Honda Civic is currently the only car on the market with a CNG option. A refueling station can be installed in someone's home to refuel a civic overnight. In response to questions from members of the committee, Dr. Boberg told the committee that a gallon equivalent of CNG costs approximately \$1.25 and will allow a car to travel approximately 85% as far as a gallon of gasoline. In other states, gas utilities have handled the distribution of CNG to local gas stations. It is unlikely that installing a pipeline to transport CNG will have negative impacts on grazing land in the long term.

Committee members discussed the following:

- a comparison of natural gas and diesel fuel;
- the viability of centralized fueling stations for municipal fleets;
- differences between CNG and liquified natural gas;
- the role of the legislature in providing incentives for the industry;
- a comparison of CNG and propane;
- guidelines for installation of residential pumps;
- regulation of pipelines;
- National Fire Prevention Association standards;
- biomass production opportunities;
- hydrogen fuel applicability;
- diesel as a byproduct of gasoline production;
- dependence on foreign oil;
- lack of pipeline infrastructure;
- mileage comparison between gasoline and CNG;
- effect on utility rates to customers;
- emissions;
- taxes on CNG;
- right-of-way access costs and effects on grazing land;
- state grants for alternative fuel infrastructure;
- opposition of the Public Education Department; and
- reduced maintenance needed by CNG vehicles.

Renewable Derived Hydrogen Solutions

Eric Martinez, Jetstream Wind, Inc., expressed his support for the reintroduction of Senate Bill 210, introduced in the 2011 regular session and pocket-vetoed by the governor. Mr. Martinez told the committee that the bill would jump-start a new industry for New Mexico and provide employment, economic development and an influx of capital. Over 20,000 tons of hydrogen are manufactured each day in the United States. Hydrogen production tax incentives

would encourage the production of hydrogen in New Mexico, which would provide employment and revenue for the state.

The committee endorsed, without opposition, the proposed legislation with a change that added language to provide for certification by the Taxation and Revenue Department (TRD), based on information from the Energy, Minerals and Natural Resources Department (EMNRD), that the hydrogen is generated by pyrolysis.

University Affiliated Public Broadcasting

Franz Joachim, director of content, KNME at UNM, and Glen T. Cerny, executive director, University Broadcasting, NMSU, told the committee that TV and radio stations KENW, KNME and KRWG have reached out to their local communities in a variety of ways. The stations share programming in some cases in order to better serve their audiences. The stations and their accompanying online resources provide news and information at any time of day. The stations have worked with digital technology to come up with solutions for schools that do not have access to adequate bandwidth resources. The master control, a vital control for the TV stations, will need to be replaced in the next three to five years.

Members of the committee discussed funding for a new master control as well as the current budgets for the various stations. Committee members requested that each station provide the committee with information regarding its annual budget.

The committee made compliments to the public media after asking about the impact of budget cuts and the revenue breakdown for the universities.

Following the presentation by UNM and NMSU, Representative Gonzales recessed the meeting at 4:15 p.m.

Tuesday, November 29

Department of Information Technology (DoIT) Status Report

Darryl Ackley, secretary, DoIT, and Mike Baca, acting director of policy and planning, DoIT, presented the committee with a status report on the DoIT. The DoIT is the consolidated IT agency that is almost entirely revenue funded. The DoIT offers services such as the Statewide Human Resources, Accounting and Financial Management Reporting System (SHARE), mainframe stabilization, performance monitoring, security and billing. The DoIT is overseeing more than 50 projects with a total value of approximately \$250 million. The DoIT also manages the Sunshine Portal.

Committee members discussed the following:

- the life expectancy of the state's mainframe computer;
- the dominant agencies for the volume of minutes used on the mainframe system;
- the status of consolidation of data centers;
- the number of hacking attempts;
- independent outside review of state security systems;
- revenue from mainframe operations and its effect on the DoIT's budget;
- five-digit dialing for state agencies and consolidation of telephone services;
- completion dates for tower upgrades;
- excess bandwidth usage;

- warranties or performance guarantees for SHARE;
- alternative revenue sources to pay for SHARE improvements;
- IT professional opportunities;
- overuse of acronyms;
- previous huge loss of data;
- efficacy of IT security systems;
- meaning of the term "stovepipe";
- physical access and security of the mainframe; and
- the IT work force.

New Mexico Integrated Strategic Broadband Initiative Report

Secretary Ackley and George Clarke, DoIT, told the committee about the New Mexico Integrated Strategic Broadband Initiative Report, a program that strives to provide broadband access to the entire state. The program process involves defining service areas and technologies, identifying issues and implementing steps to increase adoption. The program is funded in part by stimulus funds from the federal American Recovery and Reinvestment Act of 2009 (ARRA). The total federal award is \$4.8 million with a state match requirement of \$1.2 million. The broadband program identifies barriers to broadband adoption, educates and markets broadband awareness and enhances broadband expansion. The Broadband Executive Committee includes directors of industry, regulation, health, Native American nations, tribes and pueblos, nonprofits, education and the New Mexico Geospatial Data Clearinghouse. Technical assistance is offered through an education inventory, seminars, a Native American lands pilot and specific community resource support.

Richard Lowenberg from the 1st-Mile Institute presented the New Mexico Broadband Report, a snapshot update of broadband initiatives, economics and developments in the state. Mr. Lowenberg stated that ARRA funds are now supporting a number of broadband infrastructure projects in New Mexico, including Baca Valley Telephone, Windstream Communications, U.S. Cable and others. In 2010, the DoIT was awarded \$1.4 million from the National Telecommunications and Information Administration (NTIA) States Broadband Data and Development Program funding for a two-year project to gather and analyze data and to map broadband in the state, with an additional \$500,000 for five years of statewide broadband planning. Mr. Lowenberg emphasized that broadband networks in New Mexico should be built in coordination with smart-grid energy infrastructures, intelligent transportation, public works and water infrastructure improvements rather than funding separate and redundant construction projects. Integrated planning and construction will save the state millions of dollars every year.

Mr. Lowenberg also made recommendations to the committee. These recommendations included the state's support of the NTIA-funded State Broadband Initiative, steps to leverage current investment initiatives, facilitated working meetings with agreed strategic objectives between public and private sector representatives, DoIT assistance to tribes and municipalities and a focus on ways to address the most in-need broadband access in New Mexico.

The committee discussed the benefits and importance of internet access, comparing the internet to the interstate highway system that was first developed under the Eisenhower administration.

ONGARD, TRD GenTax System and Motor Vehicle Division Reengineering Project Status Update

Greg Saunders, chief information officer, TRD, told the committee that ONGARD supports the State Land Office (SLO) for royalties and maintenance of related trust land leasing, the TRD for taxation, the Oil Conservation Division of the EMNRD for permitting and the administration of the Oil and Gas Reclamation Fund as well as oil and gas industry customers. The ONGARD system enables distribution of the revenues to various beneficiaries. Mr. Saunders discussed challenges to the ONGARD system, including budget restraints, difficulty collecting adequate data, mainframe changes and staffing. If ONGARD is not recommended for funding during the 2012 regular session, the ONGARD system is at risk of failure, which could significantly affect the TRD and SLO.

The TRD presented a proposal for a GenTax Version 8 upgrade. The GenTax system was implemented in 2002 and has grown from processing two tax programs to processing 28. The system manages a tax revenue stream of \$6.5 billion annually and provides the accounting basis for TRD financial revenue processing. The system is also used to enforce tax code compliance and to combat tax fraud. Version 8 of GenTax offers additional reduction of fraudulent refunds due to better fraud detection, more efficient processing and increased audit, collections and return validations. Version 8 has been very successful in other states. Annual maintenance and support of Version 8 includes full upgrades when new versions are released.

The current Motor Vehicle Division (MVD) system faces several challenges, including higher costs and old technology that is becoming obsolete. The Commercial Driver's License Information System has been developed in-house and will meet federal mandates for the first quarter of 2012. A request for information was published in July 2011, and the TRD is deciding whether to proceed with a request for proposals. The MVD is proposing a new system built on service-oriented architecture that utilizes industry standard best practices in order to emphasize quality assurance and quality control throughout the life cycle of the project.

Committee members discussed the following:

- MVD programs on Indian reservations;
- the integration of the three systems;
- the cancellation of the contract with Hewlett-Packard;
- the inherent slowness of motor vehicle databases and IT systems throughout the states;
- the status of appropriations;
- GenTax problems;
- ONGARD's reliance on COBOL language operating systems and getting ONGARD off the mainframe;
- the lack of a plan for ONGARD;
- the recruitment system at the State Personnel Office;
- the age of the ONGARD system and cost to maintain it;
- the role of the New Mexico Finance Authority in potential financing of IT systems for the state;
- high turnover and turmoil in IT systems staffing at the TRD; and
- constant change of IT systems.

Workforce Solutions Department's Unemployment Insurance Modernization Information Technology

The Workforce Solutions Department (WSD) signed a contract with Deloitte Consulting

LLC and began the process of implementing a new unemployment insurance (UI) tax system. The United States Department of Labor (DOL) granted the WSD two budget requests to design, implement and carry out the identification, collection and management of overpayments and to participate in specific and well-defined DOL Program Integrity Initiatives. Objectives of the uFACTS system include improving service to employers and claimants, streamlining business processes and allowing for quicker modifications due to business needs or regulatory changes. In 2011, the WSD took inventory of all IT hardware, software, systems, applications, processes and procedures. The decision to invest in the uFACTS application gave the agency the opportunity to rebuild approximately 80% of its IT structure. The uFACTS application has been responsible for more than 300 reports, 300,000 pieces of outgoing correspondence every month and over 200 batch reports. The WSD employs network security, application security, database security and operational changes to protect the information of its customers and to comply with security requirements. The WSD shifted focus from unemployment to reemployment by implementing the reemployment exchange. The department is also utilizing an integrated voice response system, SHARE and other applications to ensure efficiency and effectiveness. The WSD database has been redesigned to allow for ease of maintenance. The WSD collaborates with sister agencies at the state and federal levels and is working to form a multistate consortium. The uFACTS system will be incrementally released beginning in February 2012.

Committee members discussed the following:

- the tenure of Aaron Hinds;
- the source of funding for UI claims;
- the budget for the system;
- the number of employees in the IT division at the WSD;
- staff requirements for maintaining and operating the system;
- the schedule for integration of the system;
- adaptability to changes in federal guidelines;
- security protocols; and
- simplification.

Adjournment

There being no further business before the committee, the fifth meeting of the STTC for the 2011 interim adjourned at 1:30 p.m.

Appendix

Endorsed Legislation

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SENATE BILL

50TH LEGISLATURE - STATE OF NEW MEXICO - SECOND SESSION, 2012

INTRODUCED BY

FOR THE SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE

AN ACT

RELATING TO TAXATION; ENACTING A NEW SECTION OF THE CORPORATE INCOME AND FRANCHISE TAX ACT TO PROVIDE FOR A HYDROGEN FUEL PRODUCTION CORPORATE INCOME TAX CREDIT.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF NEW MEXICO:

SECTION 1. A new section of the Corporate Income and Franchise Tax Act is enacted to read:

"[NEW MATERIAL] HYDROGEN FUEL PRODUCTION CORPORATE INCOME TAX CREDIT.--

A. A taxpayer that files a New Mexico corporate income tax return may claim the hydrogen fuel production corporate income tax credit if the taxpayer holds title to a qualified hydrogen fuel or hydrogen resource generator that first produced and sold hydrogen on or before January 1, 2018.

B. The tax credit provided in this section may be

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underscoring material = new
[bracketed material] = delete

underscored material = new
[bracketed material] = delete

1 referred to as the "hydrogen fuel production corporate income
2 tax credit". The purpose of the hydrogen fuel production
3 corporate income tax credit is to stimulate the production and
4 sale of hydrogen as a renewable fuel and energy source.

5 C. The tax credit provided in this section shall not
6 be claimed as an addition to the renewable energy production
7 tax credit pursuant to Section 7-2-18.18 or 7-2A-19 NMSA 1978.

8 D. The amount of the tax credit shall equal the cost
9 of generating the hydrogen but shall not exceed one dollar
10 (\$1.00) per kilogram of the first four million kilograms of
11 hydrogen fuel produced and sold by the qualified hydrogen fuel
12 or hydrogen resource generator in the taxable year.

13 E. A taxpayer eligible for a hydrogen fuel production
14 corporate income tax credit shall be eligible for the tax
15 credit for five consecutive years, beginning on the date the
16 qualified hydrogen fuel or hydrogen resource generator begins
17 producing hydrogen. Any portion of the tax credit allowed
18 pursuant to this section that remains unused at the end of the
19 taxpayer's taxable year may be carried forward for five
20 consecutive years.

21 F. No later than October 30 of each year, the
22 department shall compile a report in regard to the hydrogen
23 fuel production corporate income tax credit provided pursuant
24 to the Corporate Income and Franchise Tax Act for the revenue
25 stabilization and tax policy committee that includes:

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underscored material = new
[bracketed material] = delete

1 (1) the number of people applying for a hydrogen
2 fuel production corporate income tax credit;

3 (2) the number and amount of hydrogen fuel
4 production corporate income tax credits allowed;

5 (3) the number of new jobs created in New Mexico in
6 the taxable year by construction and installation of hydrogen
7 fuel or resource systems, the level of production of hydrogen
8 fuel by qualified hydrogen fuel or hydrogen resource generators
9 claiming the tax credit and the total production level in the
10 state;

11 (4) the number of people employed in the generation
12 of hydrogen for fuel and the average and median wages of those
13 employed; and

14 (5) any other data or information deemed necessary
15 by the department to aid the committee in determining the
16 impact of the hydrogen fuel production corporate income tax
17 credit.

18 G. Notwithstanding any other section of law to the
19 contrary, the department may reveal to the revenue
20 stabilization and tax policy committee the number of applicants
21 seeking hydrogen fuel production corporate income tax credits
22 pursuant to this section and the amount of each tax credit
23 approved.

24 H. The revenue stabilization and tax policy committee
25 shall review the impact of the hydrogen fuel production

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underscored material = new
[bracketed material] = delete

1 corporate income tax credit every five years beginning in 2014.

2 I. Acceptance by a person of a hydrogen fuel
3 production corporate income tax credit pursuant to this section
4 is authorization by the person receiving the credit for the
5 department to reveal information to the legislature necessary
6 to analyze the impact of the tax credit on state revenues.

7 J. As used in this section, "qualified hydrogen fuel
8 or hydrogen resource generator" means a hydrogen fuel generator
9 or hydrogen resource generator that is certified by the
10 taxation and revenue department, pursuant to information from
11 the energy, minerals and natural resources department, to use:

12 (1) renewably powered pyrolysis such as that which
13 is:

14 (a) solar-light-derived;

15 (b) solar-heat-derived;

16 (c) plasma-derived;

17 (d) wind-derived;

18 (e) hydroelectric-derived; or

19 (f) geothermal-derived; or

20 (2) biomass or cellulose."

21 SECTION 2. APPLICABILITY.--The provisions of this act
22 apply to taxable years beginning on or after January 1, 2012.