

SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE



REPORT to the FORTY-NINTH LEGISLATURE

January 2010
Legislative Council Service
WORK PLAN

**2009 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. Janice E. Arnold-Jones
Sen. Vernon D. Asbill
Sen. Kent L. Cravens
Sen. Dede Feldman
Sen. Phil A. Griego

Sen. Linda M. Lopez
Rep. Jane E. Powdrell-Culbert
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. Luciano "Lucky" Varela
Rep. Richard D. Vigil

Advisory Members

Sen. Mark Boitano
Sen. Carlos R. Cisneros
Rep. Karen E. Giannini
Speaker Ben Lujan
Sen. Richard C. Martinez
Rep. Kathy A. McCoy

Sen. William H. Payne
Rep. Danice Picraux
Sen. John M. Sapien
Rep. Don L. Tripp
Rep. Jeannette O. Wallace

Work Plan

During the 2009 interim, the committee proposes to focus on the following activities:

(1) review and monitor:

(a) the current statewide and local broadband networking efforts, including the role of libraries and their needs, and telecommunications issues relating to the New Mexico Integrated Strategic Broadband Initiative;

(b) the ongoing operations of the Department of Information Technology and the Information Technology Commission, with emphasis on security, performance and standards, disaster recovery and business continuity;

(c) the status of enterprise-wide information technology initiatives, including statewide network services, SHARE, email, E-911 emergency systems interoperability and service systems; and

(d) the status of initiatives such as Innovative Digital Education and Learning in New Mexico (IDEAL-NM), Smart-Grid initiatives and geospatial information sharing;

(2) hear a report on the status of the supercomputing facility, including its funding, general utilization and enterprise systems;

(3) examine infrastructure related to the management of electronic records in state government;

(4) review alternative energy development, specifically renewable energy resource zones and renewable energy net metering and review the regulation of commercial wind generation and renewable energy transmission facilities;

(5) receive testimony on new technologies from Los Alamos National Laboratory and Sandia National Laboratories, including horizon activities in energy and recommendations to the legislature on these endeavors;

(6) examine the FCC mandate for state and local governments to convert existing mobile radio systems to narrow band KHz by 2013;

- (7) review the use of stimulus funding authorized by the federal American Recovery and Reinvestment Act of 2009 that affects science, technology and telecommunications in the state;
- (8) hear a progress report on the implementation of the New Mexico Research Applications Act;
- (9) review health care technology developments in New Mexico;
- (10) assess the health of the aerospace industry in New Mexico and what incentives might be appropriate and supportive of the industry; and
- (11) study the status of telecommunications competition.

2009 MEETING SCHEDULE

<u>Date</u>	<u>Location</u>
June 11	Santa Fe
July 16-17	Taos
September 1-2	Albuquerque
September 30-October 1	Santa Fe/Los Alamos
November 9-10	Santa Fe

Agendas and Minutes

TENTATIVE AGENDA
for the
FIRST MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE
June 11, 2009
Room 307, State Capitol

Thursday, June 11

- 1:30 p.m. **Call to Order**
 —Representative Roberto "Bobby" J. Gonzales, Chair
- 1:35 p.m. **Legislative Interim Committee Meeting Protocols**
 —Paula Tackett, Director, Legislative Council Service
- 2:00 p.m. **2009 Interim Work Plan, Itinerary and Meeting Schedule**
- 2:30 p.m. **Department of Information Technology Status Report**
 —Marlin Mackey, Secretary of Information Technology
- 3:30 p.m. **Adjourn**

Revised: July 1, 2009

**TENTATIVE AGENDA
for the
SECOND MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE
July 16-17, 2009
Ernie Blake Room
Hotel Don Fernando de Taos
1005 Paseo Del Pueblo Sur
Taos**

Thursday, July 16

- 10:00 a.m. **Call to Order**
—Representative Roberto "Bobby" J. Gonzales, Chair
- 10:05 a.m. **Telecommunications Competition**
—Leo Baca, Qwest
—Bill Garcia, Vice President of Governmental Affairs, Windstream
 Communications
—Charles Ferrell, Executive Director, New Mexico Exchange Carrier Group
- 11:30 a.m. **Lunch**
- 1:00 p.m. **Renewable Energy Transmission Authority Status**
—Jeremy Turner, Director, New Mexico Renewable Energy Transmission
 Authority
- 2:00 p.m. **Renewable Energy Development in New Mexico**
—Roy Stephenson, Director, Utility Division, PRC
—Craig O'Hare, Energy, Minerals and Natural Resources Department
—Luis Reyes, CEO, Kit Carson Electric Cooperative
- 3:30 p.m. **Wind Energy Farm Regulation**
—Francis Pavich, Legacy
—Ellen Drew, New Mexico Cares
- 5:00 p.m. **Recess**

Friday, July 17

- 9:00 a.m. **Integrated Strategic Broadband Initiative**
—Marlin Mackey, Secretary, Department of Information Technology
—Richard Lowenberg
- 11:00 a.m. **New Mexico Research Applications Act Status of Implementation**
—Tom Bowles, Governor's Science Advisor
- 11:30 a.m. **Stimulus Funding for Energy Initiatives**
—Tom Bowles, Governor's Science Advisor
- 12:00 noon **Lunch**
- 1:00 p.m. **Supercomputing Facility Status and Smart-Grid Initiatives**
—Tom Bowles, Governor's Science Advisor
—Stephan Helgesen, Economic Development Department
- 2:00 p.m. **Secretary of State's Information Technology and Web Site Issues**
—Francisco Trujillo, Deputy Secretary of State
- 3:00 p.m. **Adjourn**

Revised: August 24, 2009

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

**September 1-2, 2009
National Museum of Nuclear Science and History
601 Eubank Blvd. SE
Albuquerque**

Tuesday, September 1

- 10:00 a.m. **Call to Order**
—Representative Roberto "Bobby" J. Gonzales, Chair
- 10:15 a.m. **Department of Information Technology Disaster Recovery and Business Continuity Plans**
—Marlin Mackey, Secretary of Information Technology
- 11:00 a.m. **Geospatial Information Sharing Update**
—Marlin Mackey, Secretary of Information Technology
- 12:00 noon **Lunch**
- 1:00 p.m. **Science, Technology and Telecommunications Stimulus Funding**
—Marlin Mackey, Secretary of Information Technology
—Stephan Helgesen, Economic Development Department
- 2:00 p.m. **Innovative Digital Education and Learning in New Mexico**
—Veronica Chavez-Neuman, Chief Information Officer, Higher Education Department
- 3:00 p.m. **Health Care Technologies**
—Dale Alverson, M.D., Professor of Pediatrics, Director, UNM HSC Telehealth Program
- 4:00 p.m. **Energy from Algae BioFuels**
—Vimal Chaitanya, Ph.D., Vice President for Research and Graduate Studies, New Mexico State University
—Jose Olivares, Deputy Division Leader, Los Alamos National Laboratory
- 5:00 p.m. **Recess**

Wednesday, September 2

9:00 a.m. **Broadband Service to Public Libraries**
—Susan Oberlander, State Librarian

10:00 a.m. **Sandia National Laboratories' Sandia Science Technology and Engineering:
Overview**
—Julia Phillips, Director

Nanotechnology and Solid-State Lighting
—Julia Phillips, Director

National Institute for Nano-Engineering
—Justine Johannes, Senior Manager

Microsystems and Microelectronics
—David Myers, Senior Manager

High Performance Computing and Informatics
—Bruce Hendrickson, Senior Manager

Solar Energy and Smart Grid Technology Research
—Rush Robinette, Senior Manager

Technology Partnerships
—Hal Morgan, Senior Manager

1:00 p.m. **Adjourn**

Revised: September 28, 2009

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

**September 30, 2009
Room 322, State Capitol
Santa Fe**

**October 1, 2009
Fuller Lodge
Community Building
2132 Central Avenue
Los Alamos**

Wednesday, September 30 - Room 322, State Capitol

- 10:00 a.m. **Call to Order**
—Representative Roberto "Bobby" J. Gonzales, Chair
- Transmission Issues for Green Energy**
—Wayne Shirley, Regulatory Assistance Project
- 11:30 a.m. **Lunch**
- 1:00 p.m. **Solar Power Issues**
—Jim Shandalov, Vice President for Business Development, eSolar
- 2:30 p.m. **Information Technology Transformation in Data Collection and
Communications for Agriculture**
—Lesia A. Medina, Computer Operations Manager, Information Technology and
Communications, New Mexico Department of Agriculture

3:30 p.m. **Central Electronic Records Repository (CERR)**
—Sandra Jaramillo, State Records Administrator, State Records Center and Archives
—Angela C. Lucero, Records Management Division Director, State Records Center and Archives

5:00 p.m. **Recess**

Thursday, October 1 - Fuller Lodge, Los Alamos

9:00 a.m. **Welcome to Los Alamos**
—Mike Wheeler, Chair, Los Alamos County Council
—Rodger Snyder, Los Alamos Site Office Deputy Manager

9:15 a.m. **Global Warming**
—Duncan McBranch, Principal Deputy Associate Director, Science, Technology and Engineering Division, Los Alamos National Laboratory (LANL)

10:15 a.m. **LANL Economic and Work Force Development**
—Steve Girrens, Division Director, Technology Transfer Division, LANL
—Kurt Steinhaus, Office Leader, Community Programs Office, LANL

11:15 a.m. **Los Alamos Energy Programs**
—Terry Wallace, Principal Associate Director, Science, Technology and Engineer Division, LANL

12:15 p.m. **Working Lunch**

Energy Transmission Research
—Loren Toole, Technical Staff Member, Energy and Infrastructure Analysis, LANL
—Bill Tumas, Program Director, Applied Energy Programs, LANL

1:30 p.m. **Adjourn**

TENTATIVE AGENDA
for the
FIFTH MEETING
of the
SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE
November 9-10, 2009
Room 322, State Capitol
Santa Fe

Monday, November 9

- 10:00 a.m. **Call to Order**
—Representative Roberto "Bobby" J. Gonzales, Chair
- 10:15 a.m. **Medical Isotopes**
—Scott W. Burchiel, Ph.D., Director, New Mexico Center for Isotopes in
Medicine, University of New Mexico (UNM)
- 11:00 a.m. **Telecommunications Competition and Facility Relocation Cost Recovery**
—Loretta Armenta, Qwest
—Leo Baca, Qwest
- 12:00 noon **Lunch**
- 1:30 p.m. **Federal Communications Commission Narrowband Mandates**
—John Martinez, Deputy Secretary, Homeland Security and Emergency
Management Department
—Tom McQuillen, Deputy Secretary, Department of Information Technology
—Jimmie Hand, Gila Regional Medical Center
- 2:30 p.m. **Telecommunications in Health Care**
—Dale C. Alverson, M.D., Professor and Medical Director, Center for Telehealth
and Cybermedicine Research, UNM Health Sciences Center
- 3:30 p.m. **Algae Biofuels Commercialization by Sapphire Energy**
—Bryn Davis, Operations Manager, Sapphire Energy, Inc.
—Tim Zenk, Vice President of Corporate Affairs, Sapphire Energy, Inc.
- 5:00 p.m. **Recess**

Tuesday, November 10

- 9:00 a.m. **SunZia Southwest Transmission Project; Transporting New Mexico's
Renewables to Western Markets and Customers**
—Tom Wray, Project Manager

- 10:00 a.m. **Geospatial Task Force Findings and Recommendations (HJM 81)**
—Marlin Mackey, Secretary of Information Technology
- 11:00 a.m. **New Mexico's Green Grid**
—Patricia Sullivan, Ph.D., Assistant Dean of Engineering, New Mexico State
University (NMSU)
—Satish Ranade, Ph.D., Professor of Engineering, NMSU
- 12:00 noon **Lunch**
- 1:00 p.m. **Linking the Eastern and Western Grids**
—Phil Harris, CEO, Tres Amigas (Invited)
- 2:00 p.m. **New Mexico Renewable Energy Transmission Authority Proposed
Legislation**
—Jeremy Turner, Director, New Mexico Renewable Energy Transmission
Authority
- 3:00 p.m. **New Mexico's Energy Economy, New Mexico First Town Hall Report**
—Heather Balas, President and Executive Director, Director, New Mexico First
—Jennifer A. Salisbury, Chair, Energy Implementation Committee, New Mexico
First
- 4:00 p.m. **Adjourn**

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

**June 11, 2009
Room 307, State Capitol
Santa Fe**

The first meeting of the Science, Technology and Telecommunications Committee was called to order at 1:30 p.m. on Thursday, June 11, 2009, by Representative Roberto "Bobby" J. Gonzales, chair, in Room 307 of the State Capitol in Santa Fe.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair
Sen. Stephen H. Fischmann, Vice Chair
Rep. Janice E. Arnold-Jones
Sen. Dede Feldman
Sen. Phil A. Griego
Rep. Jane E. Powdrell-Culbert
Rep. Nick L. Salazar
Rep. Luciano "Lucky" Varela

Absent

Sen. Vernon D. Asbill
Sen. Kent L. Cravens
Sen. Linda M. Lopez
Rep. Debbie A. Rodella
Rep. Richard D. Vigil

Advisory Members

Sen. Mark Boitano
Rep. Karen E. Giannini
Rep. Kathy A. McCoy
Rep. Danice Picraux
Rep. Jeannette O. Wallace

Sen. Carlos R. Cisneros
Rep. Ben Lujan
Sen. Richard C. Martinez
Sen. William H. Payne
Sen. John M. Sapien
Rep. Don L. Tripp

Staff

Gordon Meeks
Ralph Vincent
Mark Harben

Guests

The guest list is in the original meeting file.

The chair announced that he will start every meeting on time. Committee members then introduced themselves.

Thursday, June 11

Interim Committee Meeting Protocols

Paula Tackett, director, Legislative Council Service (LCS), gave an overview on the protocol for interim committee meetings. She explained that the New Mexico Legislative Council decided to clarify interim committee protocols because some issues were not covered last year. Ms. Tackett discussed the definition of a "quorum" in order to conduct business as a voting committee and said that once a quorum is established, it is assumed to exist unless challenged. According to Ms. Tackett, if a challenge is issued, only voting members can vote; while advisory members may express their views, their vote cannot be counted formally. Membership of committees may be adjusted to make sure there is a quorum for purposes of conducting a meeting. She said this maneuver is intended to allow the committees to function officially and is not designed to change the outcome of a particular vote.

Ms. Tackett stated that a member may resign at any time, but the council must replace that member in a way to maintain the balance and proportion of partisan membership of the legislature as a whole. A special subcommittee may conduct business of the committee but not take formal votes. That special subcommittee can be 10 members composed of either voting or non-voting members, but no formal votes may be taken by that subcommittee. Another special subcommittee may consist of five members, including the chair and one member each of both parties from both chambers.

The majority of members of the committee of one chamber may block the formal action proposed even if the other chamber's members constitute a majority of the committee members present, according to Ms. Tackett. There are exceptions to this rule, but the Science, Technology and Telecommunications Committee is not exempted. The chair may designate someone else to preside over the committee for limited periods.

She told the committee that the sound systems in committee meeting rooms are adjusted to automatically adjust the volume. Some conditions may obstruct the microphones and affect volume. Seating capacity in the Capitol was designed to accommodate committees in the 1970s and 1980s. As many committee members as possible are seated at the dais, and the patience of committee members is appreciated if members have to be seated at an auxiliary table.

The council has asked the staff to develop a schedule that minimizes conflicts of voting members, she explained. Raúl Burciaga, LCS, has created a schedule with a minimal amount of conflicts, so Ms. Tackett asked the members to avoid making changes unless absolutely necessary.

She discussed the per diem rules, including travel days that are eligible for per diem. She also explained that each legislator may attend other committees and obtain per diem for up to four days with prior approval from either the speaker or pro tem. Travel out of state may also be approved but must be done so prior to the travel.

Ms. Tackett indicated that current legislator contact information is necessary, and that this information will be kept confidential if requested.

Mr. Burciaga explained the schedule and rationale for the dates selected and the effort to avoid conflicts.

Mr. Meeks discussed where the committee plans to meet and commented on the proposed work plan.

Members of the committee discussed the updated work plan. They explored topics such as the super computer, Los Alamos National Laboratory and the committee's calendar.

FCC Rules for Emergency Response Radio Frequencies

Jim Hand from the Gila Regional Medical Center briefly explained an order issued by the Federal Communications Commission (FCC) mandating that all Part 90 business, educational, industrial public safety and state and local government VHF (150-174 MHz) and UHF (421-512 MHz) private land mobile radio (PLMR) licensees convert their radio system operations from legacy wideband (25 KHz) to narrowband (12.5 KHz), or the equivalent spectrum utilization by January 1, 2013. He discussed the migration process to the new standards and the misconceptions associated with the transition and asked to appear before the committee at a later date for a more extensive presentation on the issue.

The committee asked how much this conversion is going to cost. Mr. Hand estimated the cost at \$5 million for the Gila Regional Medical Center alone.

Department of Information Technology Status Report

Marlin Mackey, secretary of information technology, provided the committee with a legislative update. He discussed the services that the department provides to the state, including enterprise application and desktop services; voice communication services; hosting and storage services; and data network and internet services. Mr. Mackey explained the department's strategic initiatives, including implementing the statewide broadband network; setting policy and planning for a secure data center and network; implementing business continuity and disaster recovery service; and defining the Department of Information Technology's long-term funding model. He commented on 2009 legislation that affects the department, such as House Bill 729, House Memorial 78 and House Joint Memorial 81.

The department has a staff of 219 total positions (39 are vacant), and the budget for fiscal year 2010, according to Mr. Mackey, totals \$62,767,700. He also discussed the SHARE program, stating that a SHARE system manager has been hired, consolidation of technical resources is underway and a master project schedule has been developed. Mr. Mackey explained the IT consolidation plans for data center preparation; production server plans; production storage locations; recovery systems; and master license agreements. He mentioned the New Mexico Super Computer Initiative, stating that the system is operational, the computer assets remain with the department and the operations are with NMCAC. The secretary discussed the federal stimulus funds for broadband that will be coming to New Mexico. The goal of the grant

is to provide service for non- and under-served areas, and the anticipated size of the grant is estimated to be from \$30 million to \$100 million. Guidelines are expected on June 22.

Questions and discussion from the committee addressed:

- the competence of SHARE managers;
- antiquated systems in state agencies;
- the proposed budget of the department;
- methodology;
- results of the 2008 audit;
- membership of the Information Technology Commission;
- status of consolidation of all servers;
- whether there are backup servers; and
- the site for disaster recovery information technology.

Adjournment

The meeting adjourned at 3:08 p.m.

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

**July 16-17, 2009
Ernie Blake Room, Hotel Don Fernando de Taos
Taos**

The second meeting of the Science, Technology and Telecommunications Committee was called to order at 10:05 a.m. on Thursday, July 16, 2009, by Representative Roberto "Bobby" J. Gonzales, chair, in the Ernie Blake Room of the Hotel Don Fernando de Taos in Taos.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair
Sen. Stephen H. Fischmann, Vice Chair
Rep. Janice E. Arnold-Jones (by telephone)
Sen. Linda M. Lopez (July 16)
Rep. Jane E. Powdrell-Culbert
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. Luciano "Lucky" Varela
Rep. Richard D. Vigil

Advisory Members

Sen. Carlos R. Cisneros
Rep. Karen E. Giannini (July 16)
Sen. Richard C. Martinez (July 16)
Rep. Danice Picraux
Rep. Jeannette O. Wallace

Absent

Sen. Vernon D. Asbill
Sen. Kent L. Cravens
Sen. Dede Feldman
Sen. Phil A. Griego

Sen. Mark Boitano
Rep. Ben Lujan
Rep. Kathy A. McCoy
Sen. William H. Payne
Sen. John M. Sapien

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

Staff

Gordon Meeks
Ralph Vincent
Jeret Fleetwood

Guests

Rep. Nathan P. Cote

Thursday, July 16

The chair welcomed the committee members to Taos and thanked them for coming. He then had members of the committee introduce themselves to the audience.

Telecommunications Competition

Leo Baca of Qwest Telecommunications provided the committee with testimony regarding telecommunications competition and regulation in New Mexico. He began by providing the committee with a brief overview of Qwest's operations in New Mexico, pointing out that the company employs more than 700 people, pays approximately \$9.4 million in taxes and has spent more than \$76 million with New Mexico suppliers in 2008.

Mr. Baca went on to explain that as a provider of residential phone service, Qwest is heavily regulated. Mr. Baca said that as new technologies emerge, it is becoming increasingly difficult for the company to remain competitive in a mostly unregulated market. For example, Mr. Baca pointed out that while Qwest is regulated by the Public Regulation Commission (PRC), mostly under the New Mexico Telecommunications Act, competition from unregulated phone service providers, such as wireless phone companies and voice over internet protocol (VOIP) makes it almost impossible for Qwest to attract and retain customers. Mr. Baca indicated that Qwest is losing roughly 5,000 residential lines per month.

To help remedy this situation, Mr. Baca explained that legislation was introduced during the last session that would have allowed phone rate deregulation for intrastate services while retaining PRC authority to regulate many aspects of the industry. He noted that the bill, Senate Bill 445, was endorsed by several PRC commissioners and several telecommunications companies. However, Mr. Baca noted that the bill failed to pass.

Mr. Baca went on to explain that Qwest filed its Alternative Form of Regulation III (AFOR III) proposal with the PRC in late May as a means of remedying some of the issues addressed by SB 445. For example, he noted that the AFOR III proposal provided for rate deregulation; promotions for services, packages and bundles; increased pricing flexibility; and a more reasonable service quality compliance mechanism.

Mr. Baca then contrasted the regulation Qwest faces with the relatively unregulated environment enjoyed by many of the company's direct competitors. For example, he noted that many customers are opting to use wireless providers, which are unregulated, as their sole telephone service instead of land lines. Mr. Baca also indicated that other companies, such as cable and VOIP providers, are actively marketing their services in New Mexico in competition with Qwest.

Next, Mr. Baca went into some detail about the regulation that Qwest faces in New Mexico. For example, he stated that the statute that governs telecommunications regulation in New Mexico was enacted in 1985, well before the advent of wireless and VOIP technologies. Mr. Baca also pointed out that Qwest has been waiting for over a year on an order from the PRC regarding a promotional tariff, while unregulated companies are able to adjust their prices in response to changes in the market and technological advances. He also indicated that Qwest is

afforded less retail pricing flexibility in New Mexico than in any of the other 13 states in which it does business.

Finally, Mr. Baca emphasized that Qwest is not seeking total deregulation but rather better, fairer regulation for all telecommunications companies. He noted that SB 445 attempted to update outdated language and that any further legislative proposals depend on the PRC's ruling on the AFOR III proposal, which could be as early as October 2009.

Bill Garcia, vice president of government affairs for Windstream Communications, also discussed telecommunications regulation. He began by providing the committee with an overview of Windstream's operations in New Mexico, noting that it serves three distinct areas of the state. Mr. Garcia went on to discuss how Windstream is regulated by the state, indicating that the company is classified as a mid-size carrier, which makes it somewhat different from Qwest but still subject to price caps, pricing regulations and quality-of-service requirements. Mr. Garcia went on to explain that the combination of regulation and rapidly evolving technology makes Windstream vulnerable to the same dangers faced by Qwest: a customer base that is migrating to other technologies and regulations that makes it difficult to adapt and remain competitive.

Mr. Garcia concluded by noting that if carriers like Windstream and Qwest are to remain competitive, the rules regarding regulation must be changed to allow for parity. He echoed Mr. Baca's recommendation that regulation be made fairer, rather than done away with completely.

Charles Ferrell, executive director of the New Mexico Exchange Carrier Group (NMECG), also provided the committee with testimony regarding telecommunications regulation. He began by explaining that the NMECG is an industry company made up of 13 smaller, rural telecommunications companies. Mr. Ferrell pointed out that while the NMECG serves mostly rural customers, its combined service area covers roughly two-thirds of the state. He added that rural carriers face similar challenges to those faced by Qwest and Windstream: decreasing reliance by customers on land lines in favor of service through wireless and VOIP companies.

Mr. Ferrell went on to explain that companies such as Qwest, Windstream and the smaller providers he represents form the complex network of interexchange telecommunications facilities that enables retail and business customers across New Mexico to complete phone calls. He added that rural companies must rely heavily on the infrastructure and facilities maintained by Qwest to conduct their business, and he questioned how Qwest can be expected to maintain its network in the face of declining revenues caused by a dwindling customer base that Qwest is unable to try to win over because of the regulations with which it must comply.

Questions and comments addressed:

- the role of Congress and federal law in regulating telecommunications;
- the legislative history of SB 445;
- the PRC commissioners who opposed SB 445;
- details of the PRC for a new regulatory order;
- the status of stimulus money for telecommunications;

- the property tax liability of Comcast to level the playing field;
- how bundling or packaging of services affects competition;
- the percentage of service area that has high speed internet;
- the decline of long-distance revenue, which is Qwest's largest revenue source;
- how many companies are unregulated;
- the effect of satellite service;
- how competitiveness is the issue now, not quality of service, which was the issue 30 years ago;
- why commissioners are opposed;
- politics;
- the nature of franchise agreements;
- how long SB 445's effectiveness will extend into the future with more technological changes coming;
- the extent of federal law as it affects land lines;
- the effect on political polling of new telecommunications technologies and business realities;
- the percentage of decline in Qwest's business;
- proposed additional regulations on Qwest recommended by PRC staff; and
- promotions of wireless technology.

The committee approved a motion to send the PRC a letter requesting that the PRC consider the provisions of SB 445 and to act on Qwest's request for regulatory reform in a timely manner. There was no opposition.

The committee approved the minutes of the June 2009 meeting.

New Mexico Renewable Energy Transmission Authority Status

Jeremy Turner, director of the New Mexico Renewable Energy Transmission Authority (RETA), provided the committee with an update on the status of the authority. He began by reviewing the history and mission of the authority, noting that it is the nation's first state-level financing authority focused on developing renewable energy-related transmission and infrastructure storage projects. Mr. Turner went on to explain that the RETA has the ability to: finance energy transmission and storage projects through the issuance of bonds; assist with siting issues for projects; and help fund technologies that convert, store and return power to help address supply and demand issues.

Mr. Turner discussed the RETA's budget, the high demand for renewable energy across the western U.S. and potential projects in New Mexico. He noted that the authority's first project is a 100 megawatt wind farm in Torrance County and discussed the project's scope, financing, funding and expenses. Mr. Turner then outlined some of the current RETA projects, such as establishing policies, exploring involvement in emerging initiatives such as the Green Grid project and developing collector systems in conjunction with companies that include Public Service Company of New Mexico, SunZia and Integrated Transmission Solutions.

Questions and comments addressed:

- potential legislation to add to the RETA's authority, bonding authority, tax exemption for transmission lines and independence from the state treasurer;
- oversight issues;
- the relationship with the New Mexico Finance Authority;
- pre-qualification of transmission corridors for environmental assessments;
- eminent domain issues; and
- connections between the eastern and the western grid systems.

Renewable Energy Development in New Mexico

Craig O'Hare of the Energy, Minerals and Natural Resources Department also provided the committee with testimony regarding development of renewable energy and energy efficiency technologies and projects in New Mexico. He outlined the steps New Mexico has taken to attract clean energy industries, the economic development potential of establishing clean energy industries in the state and federal stimulus funds that are available for clean energy-related projects.

Mr. O'Hare explained that clean energy industries New Mexico hopes to attract include utility-scale renewable energy, distributed generation scale renewable energy and energy efficiency in building construction. He explained that utility-scale energy consists of projects that generate 10 to 100 megawatts and include large wind farms, deep-source geothermal power plants and large-scale solar energy projects. Mr. O'Hare pointed out that one of the obstacles facing utility-scale industries is the lack of transmission lines for energy generated from such large projects and exportation of that energy.

Mr. O'Hare then explained that distributed generation scale renewable energy industries consist of much smaller power generation efforts, such as water harvesting, home rooftop photovoltaic solar panels and increased energy efficiency. He pointed out that while these projects are much smaller and generate less energy per project, they have the potential to collectively generate 40 percent of the state's total electrical needs. Mr. O'Hare noted that some of the legislature's efforts to encourage distributed energy generation development in New Mexico, such as the Solar Rights Act, which helps protect rooftop solar panels from development that might hinder their capability, and tax credits for solar development.

Next, Mr. O'Hare discussed additional efforts to establish clean energy industries in New Mexico. He noted that some of the keys to attracting such industries are a trained, ready work force and investors interested in funding "new" energy development.

Finally, Mr. O'Hare explained that energy efficiency is another key to the emerging energy economy. He noted that increasing energy efficiency provides a way to reduce and manage energy budgets in the face of rising costs. Mr. O'Hare reviewed some of the legislative initiatives passed to help encourage building energy efficiency, such as requiring utilities to offer efficiency services to their customers and tax credits for constructing more energy efficient commercial and residential buildings.

Questions and discussion included:

- stimulus money for the weatherization assistance program;

- deep geothermal energy resources;
- sustainable forestry for woody biomass energy;
- the eligibility of dairy biomass waste for energy tax credits;
- a list of energy efficiency and clean energy stimulus projects;
- the potential for retrofitting earlier generation radiant heat systems with new geothermal technology;
- conservation compared to alternative energy generation economics;
- rate structure disincentives to customers to conserve;
- de-coupling sales from profits; and
- making the PRC process more nimble or flexible.

Roy E. Stephenson, Utility Division director of the PRC, provided the committee with an overview of renewable energy development. He began by reviewing the history of renewable energy development, starting with the establishment of renewable portfolio standards in 2004. Mr. Stephenson also reviewed the 2005 Energy Efficiency Act and subsequent revisions to the act.

Next, Mr. Stephenson discussed the energy efficiency rules passed by the legislature in 2005 and amended in 2007, which mandate cost-effective energy efficiency and load management rules and provide some financial incentives for achieving them. He also discussed several of the other efforts by the PRC to address renewable energy issues, such as promulgation of the integrated resource planning and net metering rules.

Mr. Stephenson went on to discuss current and proposed renewable energy projects, including solar projects in Santa Teresa, Cimarron and Taos and wind energy projects in Fort Sumner, San Juan and Texico.

Questions and discussion topics included:

- incentivizing energy efficiency and lower energy sales;
- integrated resource planning;
- inverted or block-design rates;
- distributed generation;
- compliance with renewable portfolio standards;
- energy efficiency programs targeted to low-income households; and
- energy efficiency in government buildings and Procurement Code obstacles.

Luis Reyes, chief operating officer of Kit Carson Electric Cooperative, provided the committee with an overview of the efforts his company has made to encourage renewable energy development. He began by reviewing the company's history in northern New Mexico and showing the area served by the co-op. Mr. Reyes also discussed the co-op's renewable energy goals and programs it has enacted to help achieve those goals.

Questions and comments included:

- Kit Carson Electric Cooperative's distributed energy purchasing program;
- ownership of the distributed energy systems;
- distant medical diagnostic technology;

- compliments to Kit Carson Electric Cooperative;
- the cost of solar systems;
- "smart meters";
- system response and reliability;
- "intelligent" appliances; and
- energy efficiency curriculum in Taos public schools.

Wind Energy Farm Regulation

Francis Pavich of the Legacy project and Ellen Drew of New Mexico Cares, as well as several other individuals, testified before the committee about their concerns regarding development of wind energy and siting of windmills for wind energy projects. They explained that while they are very much in favor of developing renewable energy technologies, there is a considerable amount of research that indicates that considerations such as damage to property and scenery, deployment of unproven technology and long-term exposure to the low-frequency sounds generated by windmills located too close to homes and animals raise serious concerns about the rush to develop wind energy in New Mexico.

The group cited problems encountered by other states, such as Michigan, which have employed wind farms too close to homes and animals and cautioned the committee to further investigate the siting of wind farms.

Questions and comments included:

- the effects of wind farms on migratory birds and bats;
- sources of low-frequency sounds;
- the number of turbines in an industrial wind farm;
- the amount of space needed for a solar concentration system to power the whole country (10 square miles);
- the efficiency of wind energy compared to ground source and solar;
- the position of the New Mexico Association of Counties;
- the Santa Rosa wind farm; and
- land use and set back issues.

Friday, July 17

Integrated Strategic Broadband Initiative

Marlin Mackey, secretary of information technology, provided the committee with testimony regarding attempts to extend broadband internet access to rural areas of the state. He explained that the department is attempting to leverage federal stimulus funding by contracting with private companies to extend the state's ability to provide broadband service to all areas of the state. Secretary Mackey explained that there are two primary federal funding sources for the project and that both have specific priorities, application and reporting requirements. He also noted that there are specific eligibility factors for communities seeking to take advantage of available funds.

Secretary Mackey then discussed legislation passed during the 2009 legislative session that reorganized the Information Technology Commission. He explained that the bill revised the

membership and duties of the commission, but noted that it took effect at the beginning of July, so the commission had not had time to begin meeting in earnest.

Questions and comments included:

- the total allocation of stimulus money to New Mexico;
- deadlines for applications for competitive grants;
- assistance by the Department of Information Technology (DOIT) to the Office of the Secretary of State to solve its computer problem;
- results of security audit;
- the confidence level for the Office of the Secretary of State's information technology system;
- membership of the Information Technology Commission;
- certification committee membership;
- public hearings on procedural rules adopted by the DOIT;
- background security checks on IT personnel;
- breaches in security;
- authority of the DOIT over the Office of the Secretary of State's information technology system (budgetary);
- DOIT oversight;
- the number of cyberattacks on the state system;
- the need for statutory change in the DOIT's authority to improve security;
- the need for higher level of security;
- costs for implementing; and
- potential cooperation with Los Alamos National Laboratory or Sandia National Laboratories on information technology security for the state.

Stimulus Funding Energy Initiative

Tom Bowles, science advisor to Governor Richardson, went on to provide the committee with an update on federal funding for energy and technology projects in New Mexico. He explained that there are several block grants available to states, noting that the state energy program expects to receive about \$31.8 million in energy block grants and plans to announce the recipients of the grants soon.

Mr. Bowles then explained that a number of city, county and Native American block grants have already been given and provided the committee with a list of entities and amounts that have already been announced.

Mr. Bowles also discussed federal mega-grants for projects such as broadband, smart grid, biofuel and health information technologies.

Questions and comments included:

- eligibility criteria for research and development projects;
- that stimulus projects must be sustainable without more federal funding;
- amount of money available in New Mexico for mega projects (\$100 million or more);
- universal deployment of broadband capacity;
- health information technology to reach out to rural areas;

- what do green grid and smart grid mean;
- state match requirements;
- that biofuels equal green algae;
- New Mexico as the algae capitol of the nation;
- how biofuels and smart grid projects are separate sources of funding; and
- training for green jobs.

New Mexico Research Application Act Status of Implementation

Mr. Bowles provided the committee with testimony regarding the status of the Research Application Act. He began by providing the committee with a short overview of the Research Application Act, which he explained seeks to increase the number of high-paying jobs, particularly in rural areas, in the state. Mr. Bowles explained that one of the keys to the program is to use federal funds and the presence of two national laboratories and several universities to help stimulate the development of such jobs. He also noted that it would be important to develop a model for private investment in research and development projects originating at the research clusters within the state that are ready for late-stage development.

Mr. Bowles identified several core areas that New Mexico could take advantage of in pursuit of the development of industries that will provide higher paying jobs for citizens, such as aerospace; biotechnology; energy and water; information technology; and nanotechnology.

Mr. Bowles went on to discuss the foundation of the New Mexico Research Applications Center (NMRAC), a nonprofit organization created to partner with businesses to help encourage opportunities in high-tech development. He explained that the center is able to:

- enter into memoranda of understanding, joint powers agreements and contracts;
- enter into business arrangements;
- incur liabilities;
- hold, sell and transfer assets; and
- solicit, receive and administer grants.

Mr. Bowles also discussed the administration of the center, providing the committee with an overview of the center's managing structure and the makeup of the public and private board overseeing the center. He also updated the committee on the status of the center, noting that it had completed its articles of incorporation and bylaws and had moved into office space.

Mr. Bowles concluded by emphasizing that New Mexico is very well suited to take advantage of federal investment in high-technology research and development and that the NMRAC will provide an important mechanism in coordinating those efforts.

Questions and discussion topics included:

- sources of private funding;
- universities paying for service;
- stimulus funding for the NMRAC;
- the secretary of higher education;
- the membership of the board;
- bylaws;

- the location of offices;
- the capacity of the supercomputer;
- the organizational chart; and
- legal aspects of the center.

Supercomputing Facility Status and Smart-Grid Initiative

Mr. Bowles also provided the committee with an update on the status of the New Mexico Computing Applications Center, located in Rio Rancho, which he noted is currently the fastest nonfederal computer in the world and the seventeenth fastest overall. He explained that the facility is primarily focused on technology-based economic development and support, education and work force development and assistance to New Mexico communities with problem solving. Mr. Bowles provided the committee with an overview of the center's board of directors and showed the digital gateways located across the state that enable electronic access to the facility. He also discussed some of the budget issues associated with the center, including staff and office operations, and listed several of the business projects with which the facility is involved. He pointed out that several of the businesses taking advantage of the supercomputer's processing capabilities are movie studios with projects in New Mexico. Finally, Mr. Bowles discussed the overall economic impact of the supercomputer facility, noting that while income from agreements with the facility in 2010 is about \$13.6 million, the facility expects to expand its business agreements to about \$600 million by 2014, mostly through film initiatives and smart-grid technology.

Stephan Helgesen, director of the Office of Science and Technology for the New Mexico Economic Development Department, provided the committee with an overview of the New Mexico Green Grid Initiative.

Secretary of State Information Technology System Status

Francisco Trujillo and A.J. Salazar from the Secretary of State's Office described employee skills, budget constraints and personnel issues with the committee.

The committee members held a give-and-take dialogue with the presenters concerning the recent information technology system failure and needs for improvement. The discussion touched on:

- similar vulnerabilities in other state agencies;
- the pooling of small agency resources to address the vulnerabilities;
- the cybersecurity issues and lack of funding to correct problems;
- the elimination of the cybersecurity office;
- extensive assistance from Secretary Mackey and the DOIT;

The committee approved a motion to send a letter to Secretary Mackey asking that the position of Cybersecurity Officer be re-established.

- examples of information technology failures throughout state government;
- the federal Help America Vote Act;
- a list of tenured, classified employees in the Secretary of State's Office;
- the Secretary of State's Office disaster recovery plan;

- the importance of the Information Technology Commission;
- the strategic plan for the DOIT;
- the reliability of Oso Grande's system;
- the need for rebuilding a secure network;
- integration of the different data systems;
- "architectural" security of information technology systems;
- reliable backup systems;
- the advisability of off-the-shelf software compared to proprietary or custom designed software;
- a list of agencies that are outsourcing information technology services;
- reasons for outsourcing;
- the interoperability of all systems;
- use of the Washington state model;
- use of New Mexico Tech's resources and skills; and
- the riskiness of in-house development.

The committee adjourned at 2:40 p.m.

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

**September 1-2, 2009
National Museum of Nuclear Science and History
601 Eubank Blvd. SE
Albuquerque**

The third meeting of the Science, Technology and Telecommunications Committee was called to order at 10:06 a.m. on Tuesday, September 1, 2009, by Representative Roberto "Bobby" J. Gonzales, chair, at the National Museum of Nuclear Science and History in Albuquerque.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair
Sen. Stephen H. Fischmann, Vice Chair
Rep. Janice E. Arnold-Jones
Sen. Dede Feldman
Sen. Linda M. Lopez
Rep. Jane E. Powdrell-Culbert
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. Luciano "Lucky" Varela (Sept. 2)
Rep. Richard D. Vigil (Sept. 2)

Absent

Sen. Vernon D. Asbill
Sen. Kent L. Cravens
Sen. Phil A. Griego

Advisory Members

Sen. Mark Boitano (Sept. 1)
Sen. Carlos R. Cisneros (Sept. 2)
Rep. Karen E. Giannini (Sept. 1)
Rep. Ben Lujan (Sept. 1)
Sen. Richard C. Martinez
Rep. Kathy A. McCoy (Sept. 1)
Rep. Danice Picraux
Rep. Don L. Tripp
Rep. Jeannette O. Wallace (Sept. 2)

Sen. William H. Payne
Sen. John M. Sapien

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

Staff

Gordon Meeks
Ralph Vincent
Jeret Fleetwood

Tuesday, September 1

The chair welcomed the committee members, who introduced themselves to the audience.

Department of Information Technology Disaster Recovery and Business Continuity Plans

Marlin Mackey, secretary of information technology, and Deputy Secretary Thomas McQuillan described the governance structure of the Business Continuity Steering Committee, its vision and mission, roles and responsibilities of members and its policies and procedures. The committee is composed of Secretary Mackey, Buddy Vaughan, Mr. McQuillan, Joel Matek from the Taxation and Revenue Department (TRD) and Bill Gonzales from the University of New Mexico (UNM). They said that the steering committee is currently reviewing the contract with Mainline Disaster Recovery Systems, LLC, which currently provides for replacement equipment and rental or leasing of additional equipment to the Department of Information Technology (DoIT) within five days of notification of a disaster. It covers all equipment in the Simms Data Center and includes the SHARE system. The contract also provides for capability to recover at an out-of-state location if necessary. The DoIT is moving toward establishing a disaster recovery site for the DoIT and state agencies and for a recovery assessment and feasibility study of redundancy for critical information technology.

The discussion addressed:

- standard protocols for notification of the public of a failure of a system or disaster;
- the number of state agencies on the centralized system;
- the status of financial systems on the DoIT system;
- the lack of a "Hot" backup now;
- the availability of disaster documentation;
- the bandwidth necessary to accommodate the full system; and
- the reason independent elective offices are not under the DoIT's authority.

Geospatial Information Sharing

Mike Baca, DoIT, summarized HJM 81, sponsored by Representative Arnold-Jones, which asked the DoIT to convene a task force to study geospatial information sharing (GIS). He reported that the task force has been created with 29 participating entities. Leading various subcommittees of the task force are Rick Koehler of the Energy, Minerals and Natural Resources Department, Larry Brotman of the TRD, Mike Inglis and Bill Sprick. Mr. Baca said the task force plans to have final recommendations by November 2009. He described nine goals of the state strategic information technology (IT) plan, which includes the reduction of costs of government operations through shared IT application architectures, programs and services, including geospatial. The Geospatial Strategic Plan was completed in August 2009 and included six recommendations: creation of a Geographic Information Office; acquisition of management support; creation of GIS councils and committees; creation of a clearinghouse and metadata portal; a web-based application for easy data access; and development of business plans for data, analysis and policy.

The committee discussed:

- the good work of the task force;

- the role of the supercomputer in geospatial IT;
- the status of a GIS data center and data analysis;
- the DoIT clearinghouse for GIS information for policymakers;
- the Google Earth system that is based on a system for which New Mexico paid;
- public access to data in the supercomputer;
- ownership of state data;
- privacy issues and protection of civil liberties;
- the quality of Albuquerque's GIS system;
- various state GIS services;

A motion was made and the committee approved, without opposition, the minutes from the previous meeting.

- the dangers of aggregation of data for public use;
- quality of web sites of different state agencies;
- the advantages of standardizing the state's web sites;
- the difference between geospatial systems and GIS; and
- the value of geospatial systems for firefighting.

Science, Technology and Telecommunications Stimulus Funding

Secretary Mackey and Stephan Helgesen from the Economic Development Department described the federal stimulus money for broadband deployment to unserved and underserved areas of the state. This is an opportunity to implement high-speed network infrastructures for unserved and underserved communities. Federal competitive grants amount to \$2.5 billion nationally from the Rural Utilities Service of the U.S. Department of Agriculture and \$4.7 billion from the Department of Commerce. New Mexico is guaranteed at least one grant. The grants require between 20 and 50 percent nonfederal matching dollars. The state is applying for a four-year phased grant based on a public/private partnership integrated with other programs to renew the state's economy. There are three rounds of grant applications, so if the state is not successful in the first round, it has more chances. The goal is to achieve basic broadband coverage for all of the state's rural areas. It includes establishment of telecomputing facilities and educational programs at schools, libraries, community centers and other local sites at a cost of \$2.7 million. The state application is 62 pages and was completed on August 26.

The committee discussed:

- Sandia National Laboratories' approach to the state on renewable energy;
- the high potential for a smart grid/green grid;
- Japanese participation in the project;
- the role of the computing applications center;
- creation of between 300 and 600 jobs as a result of the project; and
- installation of smart meters.

Innovative Digital Education and Learning in New Mexico (IDEAL-NM)

Veronica Chavez-Neuman, chief information officer for the Higher Education Department, told the committee that New Mexico is the first state in the nation to create a statewide "eLearning" system covering pre-kindergarten through college and work force continuing education as well. She testified that the IDEAL-NM pass rate was 80 percent for the

fall of 2008, 94 percent for the spring of 2009 and 99 percent for the summer of 2009. There were more than 52,000 users as of September 1 enrolled in more than 11,000 courses from 13 campuses across the state. She said that IDEAL-NM is having a positive impact on the environment and state agency budgets. As budgets are cut, travel is reduced, which leads to more usage of eLearning systems for training and conferencing. Surveys via email were conducted to collect data on usage to answer questions about net benefits of reduced travel and fuel use that eLearning enables. She reported that of the 24,000 public employees surveyed, 10 percent responded and more than 90 percent of the respondents support web-based training and conferencing. She concluded by stating that if 10 percent of New Mexico state employees participated, the state could obtain \$1.1 million in environmental impact-based stimulus money. She expects to have twice that many state employees using IDEAL-NM's web conferencing system, saving 20.4 billion British thermal units.

The committee discussed:

- the cost to public schools for eLearning services;
- potential cost savings through IDEAL-NM;
- free access to the portal;
- virtual schools' and charter schools' access to IDEAL-NM;
- the office for state employee training;
- consolidation of online training;
- telemedicine applications;
- co-matriculation among the state's post-secondary institutions;
- a list of participating school districts;
- that survival of independent public school districts may be dependent on the success of IDEAL-NM; and
- the difference between public school curricula requirements and online curricula requirements.

Energy from Algae Biofuels

Jose Olivares, deputy division leader from Los Alamos National Laboratory, and Vimal Chaitanya, vice president for research and graduate studies at New Mexico State University, addressed the committee about U.S. liquid fuel consumption and the potential size of the U.S. market for biofuels. The United States has 230 million automobiles and uses 25 percent of the world's oil. Dependence on foreign oil will increase 30 percent by 2030 at current projection levels. The country's national security depends on increasing the supply of alternative fuels. However, significant increases in plant-based agricultural biofuels would have significant negative effects on the nation's food production. The amount of land required to replace 50 percent of the nation's petroleum distillate consumption with soybean biofuels would consist of the area of a dozen midwestern states and half of Texas. The same amount of energy replacement by algae-based biofuels would require only a fraction of New Mexico's land area. Algae are more than 40 times more efficient at lipid production than soybeans or corn, and microalgae is a nonfood source having no impact on crop prices or farmland. Other advantages are that algae generate valuable byproducts; can be cultivated in brackish or impaired water; require less energy and fewer resources to produce; and can be cultivated continuously. New Mexico is particularly well suited to hosting a biofuels industry based on algae.

The committee discussed:

- the best locations for algae production;
- a schedule for commercialization;
- the status of algae biofuel companies in New Mexico;
- the acreage needed for algae production;
- algae strains used;
- a comparison of farmland revenues growing algae instead of crops;
- potential environmental impacts;
- leading research institutions in algae energy;
- investors;
- wildlife impacts;
- the definition of lipids; and
- the potential use of algae to clean wastewater.

Wednesday, September 2

Broadband Service to Public Libraries

Susan Oberlander, state librarian, said that public libraries are often the only choice for internet access by community members and are essential for accessing educational, entrepreneurial and employment resources. Teachers assign homework requiring internet use, employers require that job applications be filed online, the unemployed use the internet to search and apply for jobs and government agencies require individuals to go online for some services. Many social functions now rely on streaming media. A single library patron watching a high-definition video can consume nearly all of a 1.5 Mbps connection, leaving patrons using the library's other computers with intermittent or no access. Almost 60 percent of public libraries nationwide are unable to meet bandwidth demands during peak hours of use. New Mexico has 92 public library systems with 119 physical library locations and three state library bookmobiles to serve more than 1.9 million residents. New Mexico libraries are behind the rest of the nation in connectivity and spending per capita. The state library worked with public libraries on two stimulus broadband grants. Ms. Oberlander is requesting the Science, Technology and Telecommunications Committee to write a letter of support for the federal grant to strengthen the computer capabilities of all public libraries.

The committee discussed:

- coordination under the DoIT;
- costs of and responsibility for fiber connections;
- mobile library access;

The committee adopted a motion to support the stimulus application by the libraries.

- cooperation of broadband providers;
- the role of the Office of the Governor;
- the Public Regulation Commission's role;
- federal regulations on broadband;
- job applications required online;
- the role of the UNM;
- a lack of sympathy for applicants by human resources departments;

- incompatibility of different computer systems;
- dependence on donated computers;
- map of broadband access;
- operating costs for computers and internet services; and
- relations with school districts.

Sandia National Laboratories' Sandia Science, Technology and Engineering Overview

Julia Phillips, director of physical, chemical and nanosciences for Sandia National Laboratories (SNL), provided the committee with an overview of science, technology and engineering programs at SNL. She began by reviewing SNL's history and mission and went on to explain that there are six research foundations that support strategic capabilities: computer science; materials research; engineering sciences; microsystems; bioscience; and pulsed power. Ms. Phillips went on to note that SNL's user facilities, which include the Center for Integrated Nanotechnologies (CINT) and the Computer Science Research Institute, help SNL engage researchers internationally. For example, she pointed out that 50 percent of the users of the CINT are foreign nationals. Finally, Ms. Phillips discussed Sandia's Innovation Corridor, which includes facilities such as the CINT and the Joint Computation and Engineering Lab that allow for greater interaction between the lab and other researchers.

Nanotechnology and Solid-State Lighting

Ms. Phillips provided the committee with an overview of SNL's research on nanotechnology and solid-state lighting. She explained that while lighting accounts for a large share of overall energy consumption, it is not particularly efficient. Ms. Phillips went on to note that solid-state lighting is much more efficient than the incandescent bulbs that are currently in use, pointing out that shifting to solid-state lighting could decrease the electricity consumed by lighting by 50 percent by 2025. However, Ms. Phillips noted that solid-state lighting is currently best suited to colored applications, such as stop lights, and explained that using solid-state technology to replace general lighting will require continued breakthroughs.

Next, Ms. Phillips discussed the CINT in greater detail. She explained that the facility is operated by the U.S. Department of Energy (DOE), but emphasized that it is highly collaborative, allowing other researchers access to tools and expertise. Ms. Phillips went on to note that the CINT's focus is on nanoscience integration. For example, she discussed the CINT's work on tracking quantum dots, or extremely small pieces of matter, in living tissue as one of the ways nanotechnology can be applied to other fields.

Questions and comments included:

- partnerships in solid-state lighting between SNL and the City of Albuquerque;
- the ownership of patents for technology developed at the CINT;
- congressional involvement in SNL's mission: the laboratory must compete with other institutions for federal funding;
- an explanation that quantum dots are a collection of a few hundred atoms;
- LED and solid-state lights are still too blue to be used for general lighting purposes; and
- licensing, rather than patenting, some technology developed at the CINT.

Ms. Phillips also provided the committee with an update on the New Mexico Green Grid Initiative, a partnership between both national laboratories in the state, state and local governments to develop power generation and management technology that makes more efficient use of available resources and better meets increasing electricity demands.

National Institute for Nano-Engineering

Justine Johannes, Duane Dimos and Regan Stinnett, all of SNL, provided the committee with an overview of the National Institute for Nano-Engineering (NINE). They explained that partnerships between research institutions such as colleges, national laboratories and private interests have been identified as one of the keys to making major technological breakthroughs and that innovation institutes have been established across the country to help foster such partnerships. Ms. Johannes, Mr. Dimos and Mr. Stinnett indicated that the NINE is a prototype innovation institute whose mission is to develop the next generation of microtechnology and nanotechnology. They noted that the institute was founded in 2006 and now includes over 13 university partners, including Harvard, the Massachusetts Institute of Technology and Rice University.

Ms. Johannes, Mr. Dimos and Mr. Stinnett went on to discuss the NINE's structure and agreements, accomplishments of some of its initial projects, various student summer programs and selection of a new group of three-year projects on which the institute plans to work.

Questions and comments included:

- student summer programs involving students from New Mexico schools;
- difficulty for New Mexico graduates to gain employment with local national laboratories;
- ways the national laboratories can help rural areas of New Mexico;
- the involvement of laboratories with public schools in New Mexico; and
- the need for synergy to develop between the laboratories and education in New Mexico.

Microsystems and Microelectronics

David Myers, principal deputy director for microsystems science, technology and components at SNL, provided the committee with an overview of the microsystem and microelectronics work being done at SNL. He explained that microsystems involve adding additional functions to microchips, rather than simply packing more transistors onto them. Mr. Myers also discussed the MESA facility, which he explained is a development and production facility for any microsystem component technology that cannot or should not be obtained commercially, such as microsystems used for weapon life extension and satellite systems. He also outlined some of the microsystem partnerships SNL has entered into and some of the projects currently underway, such as viral bio-sensing and electro-needle technologies.

High-Performance Computing and Informatics

Bruce Hendrickson, senior manager for computer science and mathematics at SNL, provided the committee with an overview of the high-performance computing and informatics research being conducted at SNL. Mr. Hendrickson pointed out that SNL is a leader in parallel computing and explained that the field of informatics is growing in importance. For example,

Mr. Hendrickson noted that cybersecurity and the military and the environment involve sifting through particularly large amounts of data, and that the algebraic algorithms developed at SNL are showing promise in data mining.

Questions and comments included:

- cultural and legal aspects of data aggregation and mining;
- workloads of the Sandia supercomputer versus that of the one owned by New Mexico;
- other potential applications for data mining; and
- that data exploration allows for understanding of data in a richer way.

Solar Energy and Smart Grid Technology Research

Rush Robinett, senior manager of the energy and infrastructures group at SNL, provided the committee with an overview of renewable energy in New Mexico. He explained that New Mexico has two major renewable sources, wind and solar, and that wind energy has been fairly well exploited. Mr. Robinett went on to explain that solar energy is currently not as viable as wind, particularly because of the dropoff in production and dependability that comes with events such as cloudy days. He noted, however, that SNL is involved in the largest solar energy project in the United States to help address some of the dropoff issues.

Mr. Robinett went on to note that smart grid technology presents another means of managing the dropoffs in solar energy productivity by allowing for management of power grids in real time to better handle peak load demands. He noted that the current lack of a means to store renewable energy means that it cannot be used to satisfy baseload demands, but that asking power users to help manage loads through more efficient power usage helps keep loads lower and more even, rather than peaking at certain times of day.

Questions and comments included:

- storage limitations for renewable energy sources;
- AC and DC power compatibility issues and Texas' use of its own DC power grid preventing the export of some energy from New Mexico to Texas;
- the efficiency of tankless water systems;
- energy consumption rates and the likelihood of changing the behavior of power consumers; and
- that the relatively low cost and high quality of available electricity means higher demand for it.

Technology Partnerships

Hal Morgan, senior manager for industrial partnerships and strategy at SNL, provided the committee with a brief discussion of industrial partnerships involving SNL. He emphasized that technology transfer is a DOE and SNL mission and listed several of the mechanisms available to transfer technology from research applications to production. For example, Mr. Morgan cited a partnership between SNL and Goodyear tires that allows the company to digitally model all of its tire designs before it orders molds for them. Mr. Morgan also noted some of the partnerships between SNL and New Mexico entities, such as helping Giggling Springs in Jemez to use heat generated by area hot springs to heat cabins, saving up to \$2,500 per month in propane costs.

Questions and comments included:

- that barriers standing between SNL and increased work to benefit New Mexicans include regulatory hurdles that hamper energy transmission expansion;
- mechanics of public/private partnerships;
- the use of supercomputers by New Mexico entities; and
- the tendency of research to constantly move in new directions.

There being no further business, the committee adjourned at 1:15 p.m.

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

**September 30, 2009
Room 322, State Capitol
Santa Fe**

**October 1, 2009
Fuller Lodge
Los Alamos**

The fourth meeting of the Science, Technology and Telecommunications Committee was called to order at 10:16 a.m. on Wednesday, September 30, 2009, by Senator Stephen H. Fischmann, vice chair, in Room 322 of the State Capitol in Santa Fe.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair (Oct. 1)
Sen. Stephen H. Fischmann, Vice Chair
Rep. Janice E. Arnold-Jones (Sept. 30)
Sen. Dede Feldman
Sen. Vernon D. Asbill
Rep. Jane E. Powdrell-Culbert (Sept. 30)
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. Luciano "Lucky" Varela
Rep. Richard D. Vigil (Sept. 30)

Absent

Sen. Kent L. Cravens
Sen. Phil A. Griego
Sen. Linda M. Lopez

Advisory Members

Sen. Carlos R. Cisneros
Rep. Karen E. Giannini
Rep. Ben Lujan
Sen. Richard C. Martinez (Sept. 30)
Rep. Danice Picraux
Rep. Don L. Tripp
Rep. Jeannette O. Wallace

Sen. Mark Boitano
Rep. Kathy A. McCoy
Sen. William H. Payne
Sen. John M. Sapien

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

Guests

The guest list is in the original meeting file.

Staff

Gordon Meeks
Jeret Fleetwood

Wednesday, September 30

Transmission Issues for Green Energy

Wayne Shirley of the Regulatory Assistance Project provided the committee with an overview of electricity transmission issues. He began by providing the committee with a brief discussion about the Regulatory Assistance Project, then went on to provide the committee with a brief history of energy regulation by states. Mr. Shirley emphasized that the business model for utilities that has developed over the past few decades is less viable in today's rapidly evolving energy market. Among the obstacles confronting the ability of utilities to adapt to today's changing market is the lack of transmission lines to deliver power from newer generation sites, such as wind and solar farms, to customers hundreds of miles away. He provided the committee with maps indicating planned transmission line projects, but noted that none of them are under construction and they still face some regulatory obstacles. Mr. Shirley went on to discuss how state regulations work either to encourage or hinder transmission projects. He also pointed out that while New Mexico's location and abundant wind and solar resources help make the state be in a good position to be able to benefit from the emerging renewable energy market, regulatory issues could still hinder those efforts.

Questions and comments included:

- the impact of plug-in electric cars on electrical system loads;
- the demands placed by new and different devices on existing power demand patterns;
- the anticipated increase in demand for electricity and proposed strategies for meeting the increased demand;
- the idea that plug-in electric vehicles can be charged during evening hours, when load demands are relatively low, but power generated by wind energy seems to reach its peak;
- the Tres Amigas project, allowing the three power grids in the U.S., which currently operate on different voltage standards, potentially to trade power with one another;
- rate design issue differences between power generation and power transmission;
- the danger of overloading existing transmission lines in order to export power versus the initial costs of building too much transmission capacity and saddling consumers with the resulting costs;
- research that indicates that energy conservation and efficiency can save large amounts of energy and the reluctance of utility companies to embrace conservation efforts due to their dependence on older power generation business models;
- compatibility issues between AC and DC energy;
- the likelihood that the eastern half of the U.S. will begin to look toward western states for energy transmission;
- cost allocation issues associated with interstate power transmission;

- the difficulty of utilities to evolve into a new business model when consumers tend not to see long-term value in rate increases; and
- de-coupling of utility revenues.

Solar Power Issues

Jim Shadalov, vice president for business development at eSolar, provided the committee with an overview of eSolar's solar energy generation pilot project in Lancaster, California, and its generation project for El Paso Electric. He explained that eSolar employs solar technology that utilizes fields of precisely aimed solar panels to heat water contained in a centrally located tower to temperatures hot enough to generate steam, which in turn drives a turbine capable of generating significant amounts of electricity. Mr. Shadalov noted that recent advances in the software responsible for aiming the solar panels, coupled with some reduction to the size of the mirrors aimed at the steam tower, have made the technology much more cost-effective. He went on to indicate that the project involving El Paso Electric would be capable of producing 92 megawatts of electricity once it reaches full capacity in 2011.

Questions and comments included:

- the maintenance required to keep the mirrors in working order;
- the vulnerability of the solar panels to lightning and hail;
- locations of the manufacturing centers for the turbine, solar panels and steam tower;
- storage, reuse and eventual disposal of the water used in the steam towers;
- that wells drilled to provide water for the steam towers are existing Dona Ana county wells;
- steam tower temperature logistics;
- employment of New Mexicans to construct and operate the facility;
- threats to wildlife from the mirrors and the steam tower; and
- long-term plans for eSolar.

Information Technology Transformation in Data Collection and Communications for Agriculture

Lesia A. Medina, computer operations manager for the Information Technology and Communications Division of the New Mexico Department of Agriculture, provided the committee with an update regarding utilization of advanced technologies by the department to manage New Mexico's agricultural industry. She began by providing the committee with an overview of the New Mexico Department of Agriculture's mission and methods the department has employed to take advantage of information technology funds. For example, she highlighted the department's New Mexico Ag/Livestock Incident Response Team (NM-ALIRT), which has helped train and equip veterinarians to identify and respond to large or suspicious livestock losses occurring in New Mexico.

Ms. Medina went on to provide the committee with a demonstration of the NM-ALIRT program, emphasizing the various reporting requirements and subsequent availability of detailed livestock reports to subscribers to the program. She also pointed out how valuable constantly updated information is to New Mexico's livestock industry.

Questions and comments included:

- problems associated with low-octane gasoline being sold in Rio Arriba County;
- the relationship between the New Mexico Department of Agriculture and the New Mexico State University (NMSU) Board of Regents;
- the administrative structure of the New Mexico Department of Agriculture;
- budgetary authority for the department;
- apparent changes in focus of the department from agricultural issues to research and development; and
- potential problems associated with NMSU presenting the department's budget without fully supporting its mission.

Cental Electronic Records Repository

Sandra Jaramillo, state records administrator at the State Records Center and Archives (SRCA), and Angela C. Lucero, Records Management Division director at SRCA, provided the committee with testimony regarding challenges faced, and new initiatives proposed, by the SRCA. Ms. Jaramillo began by providing the committee with an overview of the SRCA's mission and developing challenges.

Questions and comments included:

- potential difficulties posed by constantly evolving document management programs and their growing compatibility issues with older programs;
- the use of microfilm technology and migration of paper documents to microfilm;
- the incompatibility of newer and older microfilm formats;
- document management software capabilities;
- plans to move most SRCA documents to an enterprise content management solution; and
- the investigation of document management strategies employed by large corporations.

Thursday, October 1

Mike Wheeler, chair of the Los Alamos County Commission, welcomed committee members to Los Alamos and thanked them for coming. He also discussed the importance of the committee's mission as it relates to Los Alamos and the Los Alamos National Laboratory (LANL).

Juan Griego of the National Nuclear Safety Administration also welcomed the committee to Los Alamos. He pointed out that New Mexico's national laboratories play a critical role in the national security community's ongoing mission of ensuring the country's safety from all types of threats.

Members of the committee introduced themselves to the audience.

The superintendent of Los Alamos Public Schools introduced himself to the committee and also thanked members for coming to Los Alamos.

Global Warming

Duncan McBranch, principal deputy associate director for the Science, Technology and Engineering Division at LANL, provided the committee with testimony regarding global warming. He explained that the study of climate change involves several interrelated disciplines and that there are some policy implications to the research being conducted by LANL.

First, Mr. McBranch provided the committee with an update on the overall status of climate change, explaining that while the subject of global warming is politically volatile, research does seem to indicate that human emissions, while accounting for a small percentage of overall greenhouse gas production, appear to be tipping the balance of atmospheric gases toward a mixture that encourages increased temperatures. He went on to note that one of the difficulties facing researchers is pinpointing exactly who is responsible for emissions and how emissions in one area can affect others. For example, Mr. McBranch noted that while it is relatively easy to see South Africa's emissions against the backdrop of the rest of the African continent, which is much less urbanized, it is much tougher to track emissions in larger, more densely populated areas.

Mr. McBranch went on to discuss other issues associated with global warming, such as ocean Ph levels, which he explained seem to be linked to carbon dioxide levels in the atmosphere, and soil microbiology. He also noted that LANL has begun to use computer modeling to better understand driving factors in climate change, such as ocean temperatures and sea ice levels.

Finally, Mr. McBranch discussed electric grid modeling, explaining that coal-fired electric plants account for a considerable amount of carbon dioxide emissions. He noted that shifting to renewable resources, while serving to reduce carbon dioxide emissions, will eventually require a fundamental redesign of the electric grid. Mr. McBranch pointed out that such a thing is at least possible in the U.S., but that other nations that cannot adapt will continue to rely on coal as the cheapest means of generating power and thus drive climate change.

Questions and comments included:

- the availability of federal stimulus funds for cleanup of contaminated areas;
- surface water temperature models;
- short- and long-term increases in sea level and long-term projections for sea level increase; and
- the association between power generation plants in northwestern New Mexico and increased carbon dioxide levels in the area.

LANL Economic and Work Force Development

Steve Girrens, division director for the Technology Transfer Division at LANL, and Kurt Steinhaus, office leader for the Community Programs Office at LANL, provided the committee with an overview of the economic and work force development initiatives in which the laboratory is involved. Mr. Girrens explained that by encouraging economic and work force development in New Mexico, the laboratory continues to work toward helping New Mexico establish sustainable economic growth. He began by explaining that LANL has devoted considerable funding to building a science and technology pipeline to employment for New

Mexico students. Mr. Girrens went on to list some of the educational partnerships LANL has entered into, such as Santa Fe Community College, New Mexico Highlands University and Northern New Mexico College. He also went into more detail about the pipeline to employment, explaining that the laboratory offers science and technology internships at high school, undergraduate and graduate student levels. Mr. Girrens pointed out that LANL employees also volunteer at area schools to help foster interest in science and technology. He also discussed the Math and Science Academy, citing it as a success story that can be duplicated across New Mexico.

Mr. Steinhaus provided the committee with an overview of Northern New Mexico Connect, which he called LANL's principal economic development investment. He explained that Northern New Mexico Connect helps New Mexico businesses grow by providing coaching, networking, research, technical assistance and investment activities. Mr. Steinhaus went on to note that Northern New Mexico Connect also makes use of existing LANL programs, such as the Venture Acceleration Fund, Springboard and the New Mexico Small Business Assistance program, to further support New Mexico businesses. He also provided the committee with a number of anecdotes to show that the program is already reaping positive results.

Questions and comments included:

- the use of distance learning programs to expand the reach of math and science programs;
- the time frame for licensing agreements of LANL technology;
- that LANL usually partners with small companies to license their technology;
- possible reasons for dramatic improvements in Native American students' math and science test scores;
- the application of technology transfer models to education;
- tracking of students involved in LANL education programs and the likelihood that they will work at LANL in the future; and
- how technology transfer companies find out about licensing partnerships with the laboratory.

Los Alamos Energy Programs

Terry Wallace, principal associate director of science, technology and engineering for LANL, said that ensuring that America has a reliable, affordable and clean energy supply is critical to national security. He continued to say that meeting this challenge in the face of growing global energy demand and climate change will require dramatic advances in science, technology and engineering. LANL is a central player in this scenario, according to Dr. Wallace, and Los Alamos will provide science, technology and engineering leadership for highly innovative solutions to meet the nation's energy needs.

Dr. Wallace discussed the energy security challenge, stressing the importance of energy to American society and its economy (the U.S. uses one-fifth of the world's energy). He said that the U.S. imports 70% of its oil products today and the country's energy supply is susceptible to price volatility and global politics. Renewable energy is pivotal to ensure the United States' secure access to energy in the years ahead. Dr. Wallace discussed nuclear, wind and solar

energy sources, saying that Los Alamos has a role to play in developing these sources in New Mexico. He said that LANL is looking at advanced systems to provide energy for transportation and the energy grid as well. The resources at LANL are extensive, such as computer modeling systems, research facilities and general expertise. Dr. Wallace said there are three principal elements to the Los Alamos energy security programs, including: sustainable nuclear energy; materials and concepts for clean energy; and mitigating impacts of global energy demand growth.

The discussion addressed:

- coal as the main source of electric generation energy for the foreseeable future;
- the quadrupling of auto energy use in China since 1995;
- the reconciliation of needs to reduce carbon while maintaining the economy;
- the connection between LANL research and development with other countries that are driving pollution and the world economy;
- contamination of the United States with mercury by Chinese coal-fired power plants, which are added at one new one per week;
- India's role in adding to the world's greenhouse gases;
- progress in developing small, modular nuclear reactors;
- nuclear waste disposal and reprocessing;
- holistic solutions;
- research in electric storage for alternatives to lithium; and
- potential cleanup technology for mercury fallout.

Energy Transmission Research

Loren Toole, technical staff member for energy and infrastructure analysis at LANL, and Bill Tumas, program director for applied energy programs at LANL, provided the committee with testimony regarding energy transmission, particularly concerning integration of renewable energy sources into the electric grid. They explained that energy demands are expected to increase dramatically over the next 50 years and meeting those demands will require a portfolio of energy options. Mr. Toole and Mr. Tumas went on to note that LANL is conducting research to address transmission issues and energy storage issues raised by emerging energy generation technologies.

Mr. Toole went on to discuss work that LANL has done on infrastructure modeling, noting that a scalable transmission grid model has been created. He explained that the scalable model enables researchers to study how changes on regional levels affect the national power grid. Mr. Toole also discussed renewable energy projects LANL is involved with at the Y-Bar Ranch north of El Paso, Texas.

Questions and comments included:

- the loss of energy that occurs from transmission of it from one place to another;
- short-term solutions for transmitting renewable energy generated in rural areas to urban customers;
- the tendency of utility companies to build extra turbines to meet peak demands, rather than explore energy storage options;
- who will bear the costs of building new transmission lines; and
- problems presented by building transmission lines either around or through the vast amounts of public land in the west.

There being no further business, the committee adjourned at 1:15 p.m.

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

November 9-10, 2009
Room 322, State Capitol
Santa Fe

The fifth meeting of the Science, Technology and Telecommunications Committee was called to order at 10:00 a.m. on Monday, November 9, 2009, by Representative Roberto "Bobby" Gonzales, chair, in Room 322 of the State Capitol in Santa Fe.

Present

Rep. Roberto "Bobby" J. Gonzales, Chair
(Nov. 9)
Sen. Stephen H. Fischmann, Vice Chair
Rep. Janice E. Arnold-Jones
Sen. Vernon D. Asbill
Sen. Dede Feldman
Rep. Debbie A. Rodella
Rep. Nick L. Salazar
Rep. Luciano "Lucky" Varela

Absent

Sen. Kent L. Cravens
Sen. Phil A. Griego
Sen. Linda M. Lopez
Rep. Jane E. Powdrell-Culbert
Rep. Richard D. Vigil

Advisory Members

Sen. Carlos R. Cisneros
Rep. Karen Giannini
Rep. Ben Lujan
Sen. Richard C. Martinez
Rep. Kathy A. McCoy
Rep. Danice Picraux
Rep. Don L. Tripp
Rep. Jeannette O. Wallace

Sen. Mark Boitano
Sen. William H. Payne
Sen. John M. Sapien

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

Guest Legislator

Rep. Dennis J. Roch

The guest list is in the original meeting file.

Staff

Gordon Meeks
Jeret Fleetwood

Monday, November 9

Medical Isotopes

Scott Burchiel, director of the Center for Isotopes and Medicine (CIM), and Robert Atcher, Los Alamos National Laboratory (LANL), addressed the committee on the anticipated shortage of technetium (moly/Tc-99) and its implication for health care. Dr. Atcher said that the main North American reactor responsible for Tc-99 production is off-line due to a leak. He said eight million medical procedures a year are dependent on this material. He told the committee that the Petten reactor in the Netherlands was also off-line for two months and is planning to be off-line again in 2010, so even backup sources for the material are unavailable. The material is used primarily to address the needs of heart patients and for patients with cancers that can spread to the bone. LANL is working on four projects that will expand the nation's capability to produce Tc-99, but none of these projects will be producing the material in adequate quantities for at least two more years. The Society of Nuclear Medicine is working bilaterally (with Canada) and internationally to address the consequences of the shortage. The reactor in Canada is 52 years old, close to the end of its life, and it needs to be replaced regardless of its current status.

Points of committee discussion were:

- possibility of dual use of reactors;
- potential to retool an existing reactor at the University of Missouri;
- foreign sources of radiological material posing problems for the Department of Homeland Security;
- total number of reactors in the United States;
- \$150 million to \$200 million cost for a new reactor to produce medical isotopes;
- 60 percent completion on reactivation of Sandia National Laboratories' reactor;
- shortage of trained reactor operators;
- special and unusual characteristics of Tc-99;
- regulations governing and licensing a new reactor and regulating the material;
- market for Tc-99 (\$150 million a year);
- importance to health care;
- history of the Canadian reactor;
- Food and Drug Administration approval for distribution of the material;
- medical isotopes group near Hobbs; and
- New Mexico's unique position to develop nuclear-related enterprises.

Dr. Burchiel told the committee that the CIM recently received a \$1 million grant from the Keck Foundation. He said that this money, together with a grant from the Department of Energy, will allow the center to obtain an imaging system using positrons and a gallium-68 generator. In collaboration with Lovelace Healthcare, the center will be imaging estrogen receptor dynamics at the University of New Mexico's (UNM) new cancer center. He said the CIM has also entered into a 15-year commercial partnership with Siemens.

Points of committee discussion were:

- cost savings for patients negotiated by Dr. Willman from Siemens; and

- methods of producing isotopes.

Telecommunications Competition and Facility Relocation Cost Recovery

Loretta Armenta, Leo Baca and Roman Maes, representing Qwest, requested committee endorsement of legislation. They summarized previous testimony that new technologies make it increasingly difficult for the company to remain competitive in a market mostly unregulated by the Public Regulation Commission (PRC), such as wireless phone companies and voice over internet protocol (VOIP). Qwest is losing roughly 5,000 residential lines per month. Legislation to help remedy this situation was introduced during the last session to allow phone rate deregulation for intrastate services while retaining PRC authority to regulate other aspects of the industry. Senate Bill 445 failed to pass during the 2009 session. The presenters asked the committee to endorse essentially the same legislation this session. The regulatory reform legislation eliminates subjectivity in the existing statute and establishes a defined mechanism to guide the PRC, simplifying the process and reducing costs to the state and telecommunications companies.

Points of discussion were:

- the number of wireless carriers in New Mexico;
- more wireless phones than landlines now in the state;
- VOIP and cable telecommunications options;
- relationship to federal regulations;
- unfair process in the legislative session;
- Qwest's loss of 6,000 customers per month;
- percentage of the state not covered by cellular service that relies on landlines;
- addressing issues as much as price;
- consumer choice;
- bundling capacity of Qwest;
- effect on open-access broadband competition;
- Qwest position on net-neutrality;
- investments requiring profitability;
- partnering with the state for broadband coverage; and
- position of the PRC on the bill.

The presenters also asked the committee to endorse a bill to provide for recovery of costs to relocate lines in public rights of way. An identical bill died last year in the last 30 minutes of the session on the house floor. They said that Qwest is not rate-of-return regulated. Other utilities regulated by the PRC are rate-of-return regulated and are allowed to recover costs or relocation of public right-of-way facilities through their rates.

The speaker of the house appointed Representative McCoy as a voting member, for purposes of this meeting, to replace an absent voting member.

After a suggestion was made and accepted to limit costs, the committee voted to endorse both bills.

Federal Communications Commission (FCC) Narrowband Mandates

Jim Hand, Gila Regional Medical Center, John Martinez, deputy secretary of the Homeland Security and Emergency Management Department, and Tom McQuillan, deputy secretary of the Department of Information Technology (DoIT), summarized FCC Part 90 UHF/VHF Radio Systems narrowbanding mandates requiring all Part 90 business, educational, industrial, public safety and state and local government VHF (150-174 MHz) and UHF (42-512 MHz) private land mobile radio (PLMR) licensees to convert their radio system operations from legacy wideband (25 KHz) to narrowband (12.5 KHz) or the equivalent spectrum utilization by January 1, 2013. The FCC's mandates require that all wideband-only conventional or trunked VHF and UHF radios, including handheld portables, vehicle-mounted mobiles, dispatcher stations, wireless data, telemetry or supervisory control and data acquisition (SCADA) link radios (called subscriber radios), and any associated wideband-only conventional or trunked base or repeater stations (called infrastructure radios), be replaced and operate in narrowband emission mode prior to the 2013 date to continue legal use of Part 90 radio frequencies. Upon that date, FCC radio system licenses need to have been modified to reflect the change to narrowband emissions and operation.

Over the last several years, many licensees have started the narrowband migration process by deploying dual-mode subscriber radios through an attrition process. However, this process has addressed only the first step of a multi-step process.

The presenters told the committee that it is essential that the state take a leading role in developing a migration plan to include all state and local agencies and institutions, as well as the development of an adequate budget, to address the next steps necessary to complete the narrowband migration process and become fully FCC compliant.

The committee discussed:

- need for one agency to take the lead;
- coordination and program management elements;
- the FCC's authority as emergency frequencies regulator;
- federal unfunded mandates;
- the estimated total cost to the state of \$1.4 million;
- the loss of licenses being the penalty for being out of compliance;
- potential interference with traffic signals;
- a state plan;
- specific steps and schedule to meet the requirements by 2013;
- terms of the licenses;
- that two-thirds of the state is currently out of compliance;
- the fiscal impact on small communities;
- the amount of stimulus money for narrowbanding and broadband mapping (\$1.8 million);
- the role of DoIT;
- streamlining government without a major impact on services; and
- the difference between broadband and narrowband widths on the radio frequency dial.

The committee voted to endorse a memorial asking the departments of information technology, homeland security and emergency management and finance and administration to cooperate in development of a plan for the state's response to the FCC's mandate.

The committee approved the minutes of its previous meeting.

Telecommunications in Health Care

Dr. Dale Alverson, professor at the UNM Health Sciences Center, described for the committee some benefits of telehealth services. He said that telehealth can transform systems of care, provide a more efficient distribution of limited resources, increase access and close gaps in health care, foster knowledge sharing, expand the health care work force, improve health and wellness and decrease costs. The goal of telehealth is to make health care ubiquitous through handheld wireless communications devices. Telehealth will be used in case reviews and consultation, direct patient care, family visitation and trauma triage.

The committee asked about:

- the air card deployment;
- FCC rules on telemedicine;
- funding for health care providers;
- the status of a health information technology fund;
- other financing mechanisms;
- technical means for interconnections;
- Medicaid/Medicare services disallowance of stored and forwarded technologies;
- the matching of appropriate technologies with specific situations; and
- the stroke program.

Algae Biofuels Commercialization by Sapphire Energy

Tim Zenk, vice president of Sapphire Energy, and Bryn Davis, New Mexico operations manager, told the committee that the company was established in 2007. The company has 140 employees in California and Las Cruces, New Mexico. Sapphire Energy proposes to develop the first commercial algae facility of its kind in New Mexico. The company is backed by investors and bankers, including The Wellcome Trust, ARCH Venture Partners, Venrock Associates, Cascade Investment, LLC, Deutsche Bank and Square 1 Bank and has raised over \$100 million to commercialize algae as the leading source of drop-in replacement transportation fuels. The company now holds over 230 patents and applications spanning the entire value chain — from strain development, cultivation, harvesting and oil extraction to refining. The company holds patents over the entire genome of the algae chloroplast that gives it control over everything from photosynthesis to the profile of oils produced by the algae to the environmental conditions algae can grow in. Its goal is to become the world's leading producer of renewable fuels as well as the leading producer in New Mexico. The technology is compatible with the nation's existing energy infrastructure, including today's vast network of refineries, pipelines and terminals and the existing fleet of cars, trucks and jets. These fuels can be grown on marginal desert lands and in brackish or salt water. They have a low carbon impact and are scalable in the near term and cost- competitive in the long term. Such fuels are called "green crude".

The presenters said that algae is one of nature's most efficient photosynthetic organisms, has a short growing cycle and does not require usable farmland or potable water. The environmental benefits are dramatic. The production of algae consumes enormous amounts of carbon dioxide (CO₂) from both industrial and atmospheric sources, they testified. The production of one gallon of green crude will consume about 30 pounds of CO₂. This provides a "two for one" benefit by using the CO₂ emitted by a facility such as a coal-fired electric utility as a feedstock for the production of transportation fuel. Sapphire Energy successfully produced 91-octane gasoline last year and has participated in a test flight with a Boeing 737 twin-engine aircraft. The algae-based jet fuel met all performance standards and actually burned four percent more efficiently than the petroleum-based fuel. The test pilot said that the engine performance was "textbook". Sapphire Energy provided the gasoline derived from algae grown here in New Mexico to power a gasoline car on a 10-day cross country trip from California to New York.

The company operates a research and development (R&D) facility in La Jolla, California, a 100-acre R&D facility in Las Cruces, New Mexico, and will be breaking ground on an additional 300 acres of processing capacity in rural New Mexico by the end of this year. The company plans to be producing one million gallons of fuel per year by 2012, more than 100 million gallons by 2018 and one billion gallons by 2025. It is expected that, by 2050, algae-based fuel can replace more than 25 percent of conventional petroleum. Green crude will create thousands of green collar jobs, with nearly 750 direct and indirect jobs in rural New Mexico in construction and operations, as well as multiplier job impacts. The algae industry estimates that over the next three or four years, the production of algae-based fuel will create almost 12,000 direct jobs and another 30,000 indirect jobs.

The committee discussed:

- the size of ponds used to grow algae (eight-acre units);
- reuse or recycling of water for algae growth;
- price comparisons with new sources of petroleum;
- cycle time for commercial production (14-15 days);
- use of existing pipelines to existing refineries;
- comparison in BTUs between barrels of algae-produced fuel and petroleum-based fuel;
- benefits for New Mexico by growing and processing algae-produced fuel;
- lining of ponds;
- evaporative losses;
- open-pond concept compared to contained plastic bags;
- preference of non-potable water;
- potential environmental issues;
- 70 percent less CO₂ emissions in the process of growing, refining and burning algae fuels;
- reuse of CO₂ from conventional industry;
- location and surrounding land use;
- amount of water needed;
- potential use of produced water from oil and gas operations;
- benefit of using brackish water (reduces competitive organisms to algae);
- advantages of high elevations of New Mexico; and

- use of algae to clean water.

Tuesday, November 10

SunZia Southwest Transmission Project; Transporting New Mexico's Renewable Energy to Western Markets and Customers

Tom C. Wray, project manager, told the committee that the SunZia Project is the first proposed 500 kilovolt transmission line in New Mexico. He said SunZia will provide a pathway for New Mexico's renewable energy resources to reach western markets and customers. Currently, these resources are too remote from the existing transmission infrastructure and are rendered undevelopable. SunZia will also benefit the state, because its interconnections to New Mexico's transmission grid will increase interstate power transfer capacity and enhance the state's operating reliability, he said. There are six entities participating in the development phase of the SunZia Project, including Energy Capital Partners, Southwestern Power Group, Shell WindEnergy, Salt River Project, Tucson Electric Power and Tri-State Generation and Transmission Association. SunZia's proposed route from New Mexico to Arizona is approximately 460 miles with about 2,400 miles of alternate routes under evaluation. The proposed project consists of up to two 500 kilovolt alternating current (kVAC) lines. A hybrid configuration of one 500 kVAC line and one 500 kilovolt direct current line is being considered. Mr. Wray testified that the project will interconnect with at least five substations — two in Arizona and three in New Mexico. The eastern terminus of the project is at a proposed substation in Lincoln County, New Mexico, and the western terminus is at the proposed Pinal Central Substation or Tortolita Substation in Pinal County, Arizona. The proposed route in New Mexico is estimated to be 290 miles on Bureau of Land Management (BLM) and state lands. Fifty-two miles may be on fee property. The typical right-of-way width (ROW) for one 500 kVAC line is approximately 200 feet. The project may require up to 1,000 feet of ROW to accommodate two lines and a safe, operable separation between the parallel structures. The steel tower structures are typically 130 to 160 feet in height. The distance between structures will range from 1,300 to 1,500 feet, depending on terrain conditions. He described the technical configurations of support towers and their placement.

Mr. Wray said the prospective transmission lines will enable New Mexico to transport its renewable energy to other western states that are required to meet renewable portfolio standards mandated by their public utility commissions. New Mexico regulated utilities must consume enough renewable energy to account for 20 percent of their electric sales by 2020; Arizona has targeted 15 percent by 2025; California must achieve 20 percent by 2010 and 33 percent by 2020; and Nevada has targeted 25 percent by 2025. The transmission lines will carry power generated by wind farms in Torrance, Lincoln, De Baca and Guadalupe counties and solar development facilities in Hidalgo and Luna counties. The BLM is the lead federal agency for completing an environmental impact statement (EIS). He described public scoping meetings conducted for the project and answered questions.

The committee discussed:

- use of eminent domain for transmission lines (SunZia does not have that power in New Mexico);
- capacity of lines to carry other sources of electric power, including nuclear;

- inclusion of storage capacity;
- that the ratepayers are the prospective source of revenue to pay for the lines;
- public hearings and incorporation of public comments in the plans;
- cooperation of the Department of Defense for right-of-way access through military bases;
- non-continuous transmission characteristics of renewable energy sources;
- simple cycle gas turbines as backup to renewable sources;
- four corners power generation plants connectivity to the SunZia Project;
- the Western Electricity Coordinating Council;
- public agency partners in the project (Salt River Project, Tucson Electric and Tri-State Transmission);
- open access transmission tariff regulation;
- terms of public lands easements;
- that the best place to put generation is near a load center (demand) rather than at the mine mouth as in coal-powered generation stations;
- interconnection with "High Plains Express";
- direct current compared to alternating current and location of converters for integrating hydropower direct current into the grid;
- efficiency of direct current and need to convert the whole grid and every electric device;
- low-frequency vibrations associated with large wind turbines;
- renewable portfolio standards addressing annual kilowatt hour sales; and
- PRC regulation of renewable portfolio standards generated for power out of state.

Geospatial Task Force Findings in Response to House Joint Memorial 81

Marlin Mackey, secretary of information technology, Mike Baca, DoIT, and Mike Engels, UNM, summarized the findings and recommendations of the task force, which include establishing:

1. a New Mexico State geospatial information officer at the DoIT;
2. the New Mexico Geospatial Data Center as the primary node of a decentralized system of distributed data stewards using the existing data repository located at UNM;
3. geospatial services that provide support services for geospatial data visualization, development, integration and analysis and providing funding for them; and
4. the New Mexico Geospatial Policy Council to provide policy for statewide geospatial data and services in support of statewide data acquisition, development and sharing.

The presenters told the committee that a grant for \$2 million from the federal government has been applied for to begin implementing these recommendations.

The committee discussed:

- what states now have the most sophisticated geospatial systems for New Mexico to learn from;
- ability of the public to use the state system, e.g., to find evacuation routes out of subdivisions in the event of emergencies;
- currency of data and maps;

- privacy issues;
- complexity of the memorial;
- data sharing among state agencies;
- consistent definitions of public and private data;
- security of privacy as legally required to carry over to contractors and subcontractors of the state; and
- designation of a compliance officer.

New Mexico Renewable Energy Transmission Authority Proposed Legislation

Jeremy Turner, director, and Angela Gonzales, with the Renewable Energy Transmission Authority (RETA), asked for endorsement of RETA legislation that would:

1. allow the New Mexico Finance Authority (NMFA) to review projects for bonding;
2. allow the RETA to issue bonds above or below "par", similar to the NMFA's bonding powers; and
3. add confidentiality language to the statute to protect proprietary information of clients.

The committee discussed:

- previous endorsement of this legislation by the NMFA Oversight Committee;
- example of why a power generator would want confidentiality;
- legal definition of confidentiality and the actual scope of confidentiality;
- position of private landowners ("coalition of landowners") on confidentiality language;
- contents and goal of Senate Memorial 44;
- documentation or reliability and quality of renewable energy resources;
- collateral for RETA bonds;
- the RETA's role in or relationship to the SunZia Project;
- High Plains Express memorandum of understanding with the RETA and map of High Plains Express;
- eminent domain authority of the RETA;
- potential financing sources for high tension power lines other than the RETA;
- goal of reducing costs of renewable energy;
- other states with transmission authorities like the RETA (Colorado, Wyoming, North Dakota, South Dakota and Kansas); and
- time frame for building new transmission lines.

Linking the Eastern and Western Grids

Phil Harris, managing partner and CEO of Tres Amigas, LLC, addressed the committee about his organization's efforts to connect the three U.S. asynchronous power grids through a direct current hub that can regulate the direction and level of power flows between the grids, thereby improving the efficiency of the transmission systems in all regions of the country. New Mexico is geographically located at the junction of the nation's three asynchronous electric transmission grids. It is also strategically placed at a place on earth where renewable energy resources (solar and wind in particular) could be harnessed to potentially generate 27 gigawatts of power. He said this project will provide economic incentives to further drive the growth of the nation's transmission grid by expanding opportunities for efficient transactions across

currently inaccessible market regions. It will optimize the value of existing alternating current infrastructure by utilizing state of the art technology, and it will provide reliable and cost-effective transmission services consistent with the Federal Energy Regulatory Commission (FERC) standards and regional reliability requirements. He further stated that Tres Amigas will:

1. enable the buying, selling and physical delivery of electricity between participants in multiple grids;
2. optimize the performance of renewable energy sources by offering or creating options to form intermittent power across a broad geographic area;
3. promote the development of renewable energy projects by creating an opportunity for such projects to connect to multiple high demand load areas;
4. enable renewable energy to follow hourly demand fluctuations throughout a large portion of North America; and
5. integrate large-scale renewable resources by providing the capability to manage real-time power fluctuations that would otherwise exceed the capability of many existing balancing authorities.

The Tres Amigas SuperStation is located in an area of the country rich in renewable resources. The New Mexico State Land Office has granted Tres Amigas an option to lease 14,400 acres (22.5 square miles) for this purpose. He said a study commissioned by the Western Governors' Association ranked New Mexico's potential at number one for renewable energy generation capacity at 27 gigawatts. New Mexico could produce 70,573 gigawatt hours of renewable energy annually.

The anticipated economic impact of Tres Amigas is \$2.6 billion to local economies, including 1,460 new long-term jobs and \$130 million a year to local economies. The construction phase would create as many as 7,200 new jobs, and the operational phase would mean 380 new long-term jobs.

Comments and questions addressed:

- expansion capacity;
- superconductivity;
- land availability;
- overhead versus underground transmission lines;
- availability of stimulus money for investing in Tres Amigas;
- status of filing with the FERC;
- gathering lines;
- New Mexico's need for 5,000 to 6,000 miles of new transmission lines;
- electric energy storage technology;
- the need for new line capacity before investors will be willing to support more renewable energy generation;
- allocation of costs to finance these lines to ratepayers in New Mexico;
- national security issues;
- computer security;
- obsolescence of the current U.S. grid;
- total annual economic benefits to New Mexico;

- the steps needed to move the project forward;
- cost recovery;
- definition of confidentiality;
- wasted energy from converting direct current to alternating current;
- maximum capacity design (765,000 volts);
- Australia's conversion to direct current; and
- cost of converting the U.S. system from alternating current to direct current.

The committee voted to endorse in concept a memorial to request agencies to study the cost issue and make recommendations to the legislature for financing transmission line buildout.

Tom Bowles, the governor's science advisor, gave the committee a status report on the green grid initiative's effort to secure federal funding. He said the state has submitted a grant application to the DOE for a smart grid project. There have been 129 proposals submitted, and it is estimated that eight to 12 will be funded. The initial feedback is that New Mexico is well situated to compete for the money. The state is partnering with the government of Japan (which is committing \$20 million to the project if the federal government finances it), Intel, Hunt Energy and Galvin Energy. The Japanese foreign ministry seems to be earnestly lobbying the federal government to approve the proposal. The project will go forward even without the federal funding, since none of the other partners excluding Japan have qualified their support on federal funding.

Mr. Bowles said the project is a utility scale smart grid/green grid project to export New Mexico-generated renewable energy. It will attract green technology manufacturing companies utilizing intelligent manufacturing systems. He closed by saying that energy efficiency is the foundation for energy conservation.

The committee asked about:

- the relative higher cost of power as a disincentive for manufacturers to locate in New Mexico;
- an integrating organization to bring everything together;
- a potential industry cluster to share capitalization costs;
- the need for consistent policies as an essential foundation for stable economic development; and
- the need for a guarantee of government commitment to incentives.

New Mexico's Energy Economy, New Mexico First Town Hall Report

Jennifer Salisbury, chair of New Mexico First's Energy Implementation Committee, summarized the town hall process of New Mexico First and the energy town hall's report. The overriding objective of the Town Hall on Energy is to create a diversified, innovative and resilient statewide energy system that supports long-term economic development for all areas in the state by capitalizing on New Mexico's inherent energy resources. The goal is to create a unifying energy strategy for New Mexico that will enhance and diversify economic development, tie together all related agencies and programs, energy sources and infrastructure and provide a framework for coordinated plans from each stakeholder, she told the committee. The participants at the town hall were eager to promote work force education and business models that incorporate new technologies, renewable energy, energy efficiency, conservation, public health, appropriate siting, environmental impact reduction and consumer choice. They felt that New Mexico must maximize its strengths in the development and supply of energy, for both export and internal consumption, while fostering social and geographic equity and opportunity. State policy should optimize a mix of incentives and financial instruments (private activity bonds, corporate bonds, equity, etc.) to implement the energy strategy on local and state scales, including both centralized and distributed approaches. It was felt that the first step should be the development of a detailed 20-year plan that might:

- show how to diversify New Mexico's economy and tax base to ensure the prosperity of New Mexicans in a wide range of possible futures (e.g., different energy price trends, different carbon pricing assumptions, different commodity prices, water availability, different federal scenarios and healthy communities);
- provide a roadmap for regulatory reform and policy integration across state government, including different departments and the PRC;
- have buy-ins from a wide range of stakeholders, including those not traditionally well represented;
- employ advanced analysis, including full life-cycle costing, to estimate the full range of impacts under different scenarios (e.g., tax revenue, job creation, investment costs, health costs and returns on investment, impacts on electric ratepayers, including low- and limited-income households, as well as those medically and otherwise disabled);
- address energy efficiency and conservation opportunities;
- consider how to create lasting jobs throughout the energy value chain from R&D to start-up companies, manufacturing, distribution, installation, operations and maintenance and maximizing local dollars staying in communities and the state;
- show how the proposed policies align with other state goals (e.g., environmental conservation, education, tourism, water quality, health, aesthetics and culture); and
- outline implications in all areas of public policy, including land-use policies and building codes, as they relate to energy use, generation and transmission.

The committee asked about the level of participation by employed people at New Mexico First town hall meetings.

The committee adjourned at 3:00 p.m.

ENDORSED LEGISLATION

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SENATE BILL

49TH LEGISLATURE - STATE OF NEW MEXICO - SECOND SESSION, 2010

INTRODUCED BY

FOR THE SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE
AND THE ECONOMIC AND RURAL DEVELOPMENT COMMITTEE

AN ACT

RELATING TO TELECOMMUNICATIONS; PROVIDING THAT CERTAIN RETAIL
TELECOMMUNICATIONS RATES MAY BE REMOVED FROM THE PUBLIC
REGULATION COMMISSION JURISDICTION DUE TO EFFECTIVE
COMPETITION; DECLARING AN EMERGENCY.

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

Section 1. Section 63-9A-8 NMSA 1978 (being Laws 1985,
Chapter 242, Section 8, as amended) is amended to read:

"63-9A-8. REGULATION OF RATES AND CHARGES.--

A. In accordance with the policy established in the
New Mexico Telecommunications Act, the commission shall, by its
own motion or upon petition by any interested party, hold
hearings to determine if any public telecommunications service
is subject to effective competition in the relevant market
area, which may include a local exchange area or combination of

underscored material = new
[bracketed material] = delete

1 local exchange areas or the telecommunications company's
2 service territory. When the commission has made a
3 determination that a service or part of a service is subject to
4 effective competition, the commission shall, consistent with
5 the purposes of the New Mexico Telecommunications Act, [~~modify,~~
6 ~~reduce or~~] eliminate rules, regulations and other requirements
7 applicable to the provision of such service, including the
8 fixing and determining of specific rates, tariffs or fares for
9 the service. The commission's action may include the
10 detariffing of service or the establishment of minimum rates
11 [~~which will~~] that cover the incremental costs for the service.
12 Such modification shall be consistent with the maintenance of
13 the availability of access to local exchange service at
14 affordable rates and comparable message [~~telecommunication~~]
15 telecommunications service rates, as established by the
16 commission, for comparable markets or market areas, except that
17 volume discounts or other discounts based on reasonable
18 business purposes shall be permitted. Upon petition or request
19 of an affected telecommunications company, the commission, upon
20 a finding that the requirements of [~~Subsection~~] Subsections B
21 and C of this section are met, shall [~~modify~~] eliminate the
22 same or similar regulatory requirements for those providers of
23 comparable public telecommunications services in the same
24 relevant markets so that there shall be parity of regulatory
25 standards and requirements for all such providers. The

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1 commission shall issue its final order on such petition or
2 request within one hundred twenty days from the petition or
3 request date.

4 B. ~~[In determining whether]~~ The commission shall
5 determine that a service is subject to effective competition
6 ~~[the commission shall consider the following:~~

7 ~~(1) the extent to which services are~~
8 ~~reasonably available from alternate providers in the relevant~~
9 ~~market area;~~

10 ~~(2) the ability of alternate providers to make~~
11 ~~functionally equivalent or substitute services readily~~
12 ~~available at competitive rates, terms and conditions; and~~

13 ~~(3) existing economic or regulatory barriers]~~
14 upon a determination that:

15 (1) a comparable service or facility is
16 available from a supplier other than an incumbent
17 telecommunications company in the relevant market area being
18 considered by the commission; and

19 (2) market forces in that market are
20 sufficient to assure just and reasonable rates without
21 regulation.

22 C. When considering market forces in the market
23 proposed to be deregulated, the commission shall rely on
24 evidence concerning the presence or absence of the following:

25 (1) wireless communications services;

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- 1 (2) cable telephony services;
2 (3) voice over internet protocol services; and
3 (4) the extent to which the incumbent
4 telecommunications company has lost switched access lines to
5 other providers.

6 D. If, pursuant to Subsection A of this section,
7 effective competition is found to be present in relevant
8 markets that account for over fifty percent of the retail
9 switched access lines served by the affected telecommunications
10 company, the elimination of such regulatory requirements shall
11 apply to the company's entire service area.

12 E. If the incumbent telecommunications company has
13 lost more than thirty-three percent of the retail switched
14 access lines served by the incumbent telecommunications company
15 on December 31, 2001, the commission shall declare that
16 effective competition exists for all retail services throughout
17 the incumbent telecommunications company's service area.

18 ~~[G.]~~ F. No provider of public telecommunications
19 service may use current revenues earned or expenses incurred in
20 conjunction with any noncompetitive service to subsidize
21 competitive public telecommunications services. In order to
22 avoid cross-subsidization of competitive services by
23 noncompetitive telecommunications services, prices or rates
24 charged for a competitive telecommunications service shall
25 cover the cost for the provision of the service. In any

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HOUSE BILL

49TH LEGISLATURE - STATE OF NEW MEXICO - SECOND SESSION, 2010

INTRODUCED BY

FOR THE SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE
AND THE ECONOMIC AND RURAL DEVELOPMENT COMMITTEE

AN ACT

RELATING TO TELECOMMUNICATIONS; AMENDING THE NEW MEXICO
TELECOMMUNICATIONS ACT TO PERMIT THE ALLOCATION OF RELOCATION
COSTS TO TELECOMMUNICATIONS COMPANY CUSTOMERS.

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

Section 1. A new section of the New Mexico

Telecommunications Act is enacted to read:

"[NEW MATERIAL] ALLOCATION OF RELOCATION COSTS TO
CUSTOMERS--COMMISSION AUDIT.--

A. Notwithstanding any other provision of law,
telecommunications companies shall be entitled to recover from
their retail customers, without a request for a change in
rates, the actual costs incurred for the alteration, change,
moving or relocation of infrastructure or facilities requested
by the state or a political subdivision or instrumentality of

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1 the state. Thirty days prior to assessing retail customers a
2 fee to recover actual costs incurred for the alteration,
3 change, moving or relocation of infrastructure or facilities
4 requested by the state or a political subdivision or
5 instrumentality of the state, a telecommunications company
6 shall notify the commission in writing of the imposition of the
7 fee that the company intends to impose on the company's retail
8 customers and shall show the fee as a separate line item on the
9 customer's bill.

10 B. Upon petition by an interested party or on its
11 own motion, the commission may conduct an investigation to
12 verify that a fee imposed by a telecommunications company
13 recovers the actual costs incurred. In such an investigation,
14 the commission shall verify the actual costs that may be
15 recovered from the telecommunications company's retail
16 customers. In the event the commission, based on evidence
17 presented at a hearing, finds that a telecommunications company
18 is not recovering its actual costs incurred, the commission
19 shall order modifications or adjustments to a fee imposed
20 pursuant to this section so that the telecommunications company
21 may recover its actual costs.

22 C. As used in this section:

23 (1) "actual costs" includes all capital and
24 non-capital costs, not otherwise recoverable, incurred to
25 relocate infrastructure or facilities as well as all costs

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1 incurred to remove any infrastructure or facilities up to a
2 maximum amount in any twelve-month period of one million
3 dollars (\$1,000,000); "actual costs" does not include the cost
4 of upgrading the facility being relocated; and

5 (2) "infrastructure or facilities" includes
6 infrastructure or facilities used to provide interstate and
7 intrastate services, including regulated, unregulated and
8 deregulated services."

9 Section 2. APPLICABILITY.--The provisions of this act
10 shall apply to costs incurred after July 1, 2010 to relocate
11 infrastructure or facilities as well as all costs incurred
12 after July 1, 2010 to remove any infrastructure or facilities.

13 Section 3. EFFECTIVE DATE.--The effective date of the
14 provisions of this act is July 1, 2010.