

RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE



REPORT to the FIFTY-FIRST LEGISLATURE

December 2012
Legislative Council Service

SUMMARY

Radioactive and Hazardous Materials Committee Executive Summary

The Radioactive and Hazardous Materials Committee (RHMC) is a statutory committee created in 1979 to act as the legislature's liaison with the U.S. Department of Energy and other federal agencies involved with the Waste Isolation Pilot Plant (WIPP) near Carlsbad. Through the years, various RHMC chairs have interpreted the committee's statutory mandate broadly to include not just radioactive and hazardous materials issues but environmental issues generally, including air and water quality, solid waste, underground storage tank leak mitigation, oil and gas regulations and renewable energy policies. The committee toured URENCO this year, in addition to hearing status reports on WIPP and cleanup of legacy sites at Los Alamos National Laboratory. The committee endorsed one bill — the right of first refusal for utilities to construct transmission lines within their service area. It also heard testimony this year on the status of the Corrective Action Fund, mercury lightbulb hazards, first-responder training, monitoring efforts of the potential sinkhole in Carlsbad and progress at International Isotopes, Inc., and Eldorado Biofuels.

**APPROVED WORK PLAN AND
SCHEDULE**

**2012 APPROVED
WORK PLAN AND MEETING SCHEDULE
for the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

Members

Rep. Antonio Lujan, Chair	Sen. Stephen H. Fischmann
Sen. Richard C. Martinez, Vice Chair	Sen. Carroll H. Leavell
Rep. Thomas A. Anderson	Sen. John Pinto
Sen. Vernon D. Asbill	Rep. Jim R. Trujillo
Rep. Cathrynn N. Brown	Rep. Shirley A. Tyler
Rep. Brian F. Egolf, Jr.	Sen. David Ulibarri

Advisory Members

Sen. Rod Adair	Sen. Gay G. Kernan
Rep. Eliseo Lee Alcon	Sen. Lynda M. Lovejoy
Rep. Donald E. Bratton	Sen. William H. Payne
Sen. William F. Burt	Sen. Nancy Rodriguez
Sen. Eric G. Griego	Rep. Nick L. Salazar
Rep. Jim W. Hall	Sen. Bernadette M. Sanchez

Work Plan

The Radioactive and Hazardous Materials Committee was created in 1979 pursuant to the provisions of the Radioactive and Hazardous Materials Act. During the 2012 interim, the committee will review:

1. federal nuclear energy initiatives;
2. Waste Isolation Pilot Plant (WIPP) operations and management;
3. U.S. Department of Energy "energy park" initiatives for Los Alamos National Laboratory (LANL), WIPP and Sandia National Laboratories;
4. Department of Environment programs and operations;
5. LANL progress on uranium legacy site cleanup and shipment of waste to WIPP;
6. renewable energy initiatives that may relate to radioactive and hazardous materials issues;
7. hydraulic fracturing for enhanced natural gas production;
8. the consequences of waste streams to landfills, including accidental breaking of compact fluorescent lights in residences and electronic wastes that have heavy metal components; and
9. a tour of the URENCO facility in Eunice.

**Radioactive and Hazardous Materials Committee
2012 Approved Meeting Schedule**

<u>Date</u>	<u>Location</u>
June 12	Santa Fe
July 19	Santa Fe
September 5-6	Hobbs/Eunice
October 22	Santa Fe
November 28	Santa Fe

AGENDAS

Revised: June 11, 2012

**TENTATIVE AGENDA
for the
FIRST MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**June 12, 2012
Room 321, State Capitol**

Tuesday, June 12

- 10:00 a.m. **Call to Order**
—Representative Antonio Lujan, Chair
- 10:05 a.m. **Los Alamos Legacy Waste and Waste Isolation Pilot Plant (WIPP) Permit Status Reports**
—Jim Davis, Director, Resource Protection Division, Department of Environment
- 11:30 a.m. **Lunch**
- 1:00 p.m. **Update from Los Alamos National Laboratory (LANL)**
—Bruce G. Schappell, Deputy Associate Director for Environmental Programs,
LANL
- 2:30 p.m. **Update from WIPP**
—Jose Franco, Carlsbad Field Office Manager, WIPP
- 4:00 p.m. **2012 Interim Work Plan and Meeting Schedule**
- 5:00 p.m. **Adjourn**

Revised: July 18, 2012

**TENTATIVE AGENDA
for the
SECOND MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**July 19, 2012
Room 321, State Capitol
Santa Fe**

Thursday, July 19

- 10:00 a.m. **Call to Order**
—Representative Antonio Lujan, Chair
- 10:05 a.m. **Citizens Advisory Board**
—Ralph Phelps, Chair
- 11:00 a.m. **Regional Coalition of Los Alamos National Laboratory (LANL)
Communities**
—David Coss, Mayor, Santa Fe
- 12:00 noon **Lunch**
- 1:30 p.m. **LANL Energy Programs Overview**
—John Sarrao, Program Director, Office of Science Programs, LANL
- 2:30 p.m. **Budgeting for Environmental Management at LANL**
—Kevin Smith, National Nuclear Security Agency (NNSA)
—Pete Maggiore, NNSA
- 3:30 p.m. **Public Comment**
- 4:00 p.m. **Adjourn**

**TENTATIVE AGENDA
for the
THIRD MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**September 5-6, 2012
Multipurpose Room, Bob Moran Building
New Mexico Junior College
5317 Lovington Highway
Hobbs**

Wednesday, September 5 — New Mexico Junior College

- 10:00 a.m. **Call to Order**
 —Senator Richard C. Martinez, Vice Chair
- 10:05 a.m. **Welcome**
 —Dr. Steve McCleery, President, New Mexico Junior College (NMJC)
- 10:15 a.m. **Waste Isolation Pilot Plant (WIPP) Status Report**
 —Bill Mackie, WIPP
- 12:00 noon **Lunch**
- 1:30 p.m. **Carlsbad Environmental Monitoring Research Center — History, Mission
and Status Report**
 —Russell Hardy, Director, Carlsbad Environmental Monitoring Research Center
- 2:30 p.m. **Carlsbad Brine Well Status Report**
 —Jim Griswold, Senior Hydrologist, Energy, Minerals and Natural Resources
 Department
- 3:30 p.m. **Alternative Energy Innovations**
 —Paul Laur, President, Eldorado Biofuels
- 5:00 p.m. **Recess**

Thursday, September 6 — Tour of URENCO*

- 8:30 a.m. **Meet at NMJC Parking Lot**
 —Tour of URENCO, Eunice, New Mexico
- 1:00 p.m. **Return to NMJC and Adjourn**

*classified tour by invitation

**TENTATIVE AGENDA
for the
FOURTH MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**October 22, 2012
Room 321, State Capitol
Santa Fe**

Monday, October 22

- 10:00 a.m. **Call to Order**
—Representative Antonio Lujan, Chair
- 10:05 a.m. **Oil and Gas Issues**
—Kent Cravens, New Mexico Oil and Gas Association
—Ocean Munds-Dry, Concho Resources
- 11:30 a.m. **Lunch**
- 1:00 p.m. **Electric Transmission for Renewable Resources**
—Varney Brandt, Xcel Energy
—Steve Fogel, Assistant General Counsel, Xcel Energy
- 2:00 p.m. **Renewable Energy Transmission Authority Status Report**
—Jeremy Turner, Director
- 3:00 p.m. **First Responder Training**
—John Standefer, State Fire Marshal
- 4:00 p.m. **Adjourn**

Revised: 11/16/12

**TENTATIVE AGENDA
for the
FIFTH MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**November 28, 2012
Room 321, State Capitol**

Wednesday, November 28

- 10:00 a.m. **Call to Order**
 —Senator Richard C. Martinez, Vice Chair
- 10:05 a.m. **International Isotopes Status Report**
 —Steve Laflin, Chief Executive Officer/President
- 11:30 a.m. **Lunch**
- 1:00 p.m. **Corrective Action Fund Status Report**
 —Jeff Canney, Legislative Finance Committee
- 2:00 p.m. **Sinkholes**
 —Dr. Courtney Herrick, Sandia National Laboratories
- 3:00 p.m. **Mercury-Filled Light Bulbs**
 —John Kieling, Chief, Hazardous Waste Bureau, Department of Environment
 (Invited)
- 4:00 p.m. **Adjourn**

MINUTES

**MINUTES
of the
FIRST MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**June 12, 2012
Room 321, State Capitol**

The first meeting of the 2012 interim of the Radioactive and Hazardous Materials Committee (RHMC) was called to order by Representative Antonio Lujan, chair, at 10:00 a.m. on Tuesday, June 12, 2012, in Room 321 of the State Capitol.

Present

Rep. Antonio Lujan, Chair
Sen. Richard C. Martinez, Vice Chair
Rep. Thomas A. Anderson
Rep. Cathrynn N. Brown
Sen. Stephen H. Fischmann
Sen. John Pinto
Rep. Jim R. Trujillo
Rep. Shirley A. Tyler

Absent

Sen. Vernon D. Asbill
Rep. Brian F. Egolf, Jr.
Sen. Carroll H. Leavell
Sen. David Ulibarri

Advisory Members

Sen. Rod Adair
Rep. Eliseo Lee Alcon
Sen. William F. Burt
Rep. Jim W. Hall
Sen. Lynda M. Lovejoy
Sen. Nancy Rodriguez
Rep. Nick L. Salazar
Sen. Bernadette M. Sanchez

Rep. Donald E. Bratton
Sen. Eric G. Griego
Sen. Gay G. Kernan
Sen. William H. Payne

Staff

Gordon Meeks
Renée Gregorio

Guests and Handouts

The guest list is in the meeting file, as are copies of all handouts and written testimony.

Tuesday, June 12

Committee members introduced themselves to the audience before the chair invited the first speaker to the testifying table.

Los Alamos Legacy Waste and Waste Isolation Pilot Plant (WIPP) Permit Status Reports

Jim Davis, director, Resource Protection Division, Department of Environment (NMED), was joined by John Kieling, chief, Hazardous Waste Bureau, NMED. Mr. Davis began by reminding committee members of last year's presentation, which focused on the effects of the Las Conchas fire and the accomplishments for cleaning up legacy waste under the 2005 consent order. He also said that Governor Susana Martinez had given the NMED, in coordination with the federal Department of Environment (DOE), the priority of cleaning up transuranic (TRU) waste at Technical Area (TA) 54, Area G, and protecting regional water resources. Mr. Davis reported that the NMED and DOE came up with a framework agreement with Los Alamos National Laboratory (LANL) that is a nonbinding agreement that specifies cleanup of TRU waste, including completion of an inventory of above-ground, combustible TRU waste that amounts to 3,706 cubic meters, all of which will be removed by June 14, 2014. (See handout for other waste removal time lines.) He spoke of continuing monitoring efforts for ground water and surface water and provided a status report for the second quarter of the current fiscal year.

Mr. Davis also stated that LANL wants to renegotiate the consent order, given its public acknowledgment in January that completion of that order cannot be accomplished by the December 2015 deadline. Reasons cited include inadequate funding and technical challenges, including the area's complex geology and the volume of waste to be removed. He indicated that although LANL desires renegotiation of the 2013 deadline, the NMED is not yet ready to reschedule. He added that as the TRU waste is removed and LANL demonstrates progress, that progress will be evaluated and assessed in full public view. He stated that the NMED has granted 33 extensions as of the end of April 2012, most for two years and others from one to 11 months.

Regarding the handling of newly generated waste, Mr. Davis stated that TA 63 will be the new handling facility for such waste once TA 54 is closed, which will consolidate waste management operations into a smaller area.

Mr. Davis also announced that there is a new program manager for WIPP in the hazardous waste area who will work toward increased efficiency. In addition, he reviewed WIPP permitting activities and referred to the chart in the handout that specifies the number of shipments for waste facilities across the nation and places LANL in third place, with 184 shipments between July 1, 2011 and June 4, 2012. He stressed that WIPP is a national resource that serves a broad function for the nation at large and needs to be recognized as such. Next, Mr. Davis detailed permit modifications submitted and made for both Class 1 and 2 permits at WIPP. Most of the modifications made include changing names, editorial corrections and clarification of training requirements, he added.

Committee member questions and ensuing discussion included:

- the reclaiming of Area G once waste is cleaned up; clarification that the waste will not be disposed of at LANL because TRU waste is not stored on site;
- fears about the water table at LANL, the responsiveness of LANL in terms of ground water monitoring and the likely use of land as industrial after cleanup;

- the NMED's confidence that LANL has made significant progress on legacy waste cleanup and will continue to do so and that a new end date will be negotiated when progress is clear, likely in six to nine months;
- that nothing will be removed from the consent order, and the process will be made public;
- Santa Fe's Buckman Direct Diversion monitoring; any surface water diversion has robust protocols in place for protection, which includes shutting down flow if need be and that the water produced goes through testing and has to meet federal safe drinking water requirements;
- advisory boards that deal with the removal of waste at LANL, the NMED's correspondence with these boards and public input;
- the effect of forest fires on LANL and the NMED's focus on the removal of above-ground waste;
- additional funding in the budget for LANL cleanup, especially through the National Nuclear Security Administration (NNSA);
- *** • ***request for an NNSA representative to appear before the RHMC to discuss funding stream;***
- taking more responsibility regarding the consent order; concern over the citizen perspective of consent order renegotiation; and
- the life expectancy of WIPP and concern over the amount of waste being shipped from Idaho.

Update from LANL

Bruce Schappell, deputy associate director for environmental programs, LANL, with Rick Ulibarri expressed appreciation to the committee and invited all members to a celebration on June 26, an event to recognize the one thousandth shipment to WIPP.

Mr. Schappell's presentation focused on the status of the cleanup program, the movement of above-ground TRU waste, shifting priorities to address the highest risk and protecting water resources. He delineated the mission of environmental programs, which include repacking and shipping TRU waste, investigating and remediating legacy waste areas, demolishing unused buildings and disposing of solid waste from LANL operations. He stated that four projects were implemented with federal American Recovery and Reinvestment Act of 2009 (ARRA) funding, and all projects have been closed. He spoke of the partnering LANL has engaged in with the DOE and NNSA, which has allowed for unprecedented cleanup progress. He said that this focus on priorities and collaboration has allowed for a shift from lower-risk activities to address the highest-risk above-ground TRU waste. He reviewed the framework agreement and specifics of deliverables to which LANL has committed. He also detailed the kinds of storage in place for the 3,706 cubic meters of TRU waste that makes up the highest-priority waste for removal. He added that two more processing facilities will be built. He also stated that LANL is well ahead of its current removal plan; although only 277 cubic meters were planned for removal, 502 cubic meters have actually been removed in fiscal year (FY) 2012. He stated that the total shipments to WIPP in 2009, 2010 and 2011 have consistently set new records.

Mr. Schappell then reviewed the challenges encountered by LANL, including keeping workers safe despite high remediation activity and complexity, addressing highest risk through planning and prioritizing, packaging size reduction and work force expansion. He stated that protecting water quality remains a high priority and involves continuing to monitor ground water and surface water by collecting the right data to make remedial action decisions.

Committee member questions and ensuing discussion included:

- the handling of streams of debris for regular industrial waste materials from urban settings;
 - a full-sweep analysis of data, not just for radioactivity, but for all possible contaminants in water;
 - a new TRU facility to be used for staging future TRU waste, which is different from the current process of addressing older packaged waste; and
- *** • *a request to put the Los Alamos County Council on a future RHMC agenda.*

Update from WIPP

Jose Franco, manager, Carlsbad Field Office, DOE, introduced himself to committee members by giving his work history because he is new in his current position, although he has extensive experience with cleanup and with the DOE. He began by characterizing the WIPP team, which includes URS as the maintenance and operations contractor; LANL in Carlsbad, which provides support, especially with the more difficult waste and defining efficiencies in getting waste to Carlsbad; transportation contractors, including CAST Transportation and Visionary Solutions; Transcom, which tracks shipments; Sandia National Laboratories (SNL), which provides technical support; and CTAC, which is run by Portage and provides oversight and quality assurance.

Mr. Franco stated that the WIPP work force is composed of people from diverse backgrounds with broad experience from the nuclear industry. He touted WIPP as a facility that provides a national solution whose operations are both safe and compliant with a huge positive impact on the state. He spoke about the types of TRU waste and the difference between contact-handled (CH) and remote-handled (RH) waste as well as the different ways in which the waste is received and stored. He added that 96% of the waste at WIPP is CH and 4% is RH.

He spoke of WIPP's stable geology and the quality of the area to be easily mined as compared to hard rock. He also said that all miners employed at WIPP are vastly experienced. He described the composition of the underground waste disposal panels, with each panel containing seven rooms. Of the eight panels, five are nearly filled, he said. He added that the WIPP transportation system has logged over 12.6 million miles of safe transportation in rigorously tested and certified shipping containers. More than 31,000 first responders have been trained since 1988, Mr. Franco reported.

Mr. Franco gave figures for TRU waste shipping activity, with Idaho, LANL and Savannah River being the top shippers to WIPP. He also reported that SNL has completed its legacy campaign by completing its storage and removal of all its TRU waste this year. Nationally, there have been 22 sites cleaned of TRU waste, Mr. Franco added.

He reviewed the regulatory successes of the DOE, noting the continuation of the five-year recertification process with the Environmental Protection Agency. He also gave a summary of funds allocated to the Carlsbad Field Office through the passage of ARRA, stating that Carlsbad received \$172 million, which was needed for road infrastructure and equipping of facilities. Also, 696 jobs were created in the Carlsbad area, legacy TRU cleanup was completed at eight sites, shipments were increased from LANL, construction was completed on projects and major equipment purchases were made with ARRA funding, he added.

He stated that in the Carlsbad Field Office, there is a national TRU corporate board to bring together all generator sites throughout the country to achieve a strategy for the disposition of all legacy and non-legacy TRU waste that is integrated and compliant. He said that this board has named LANL as its top priority.

Mr. Franco reviewed budgets, challenges and priorities for FY2012 and beyond. He said that because cleanup of LANL is the priority, this could impact shipments coming from Savannah River or Idaho.

Committee member questions and ensuing discussion included:

- the expected life span of WIPP given at 25 years initially, or until 2035;
- that if WIPP's mission is expanded to include commercial TRU waste, Mr. Franco's opinion is that there is not any technical reason why commercial waste should not come;
- that a blue ribbon commission to address supporting other waste streams at WIPP would help to provide separation between defense-related and commercial waste;
- that there are 20 to 30 waste generator sites nationwide and most have been cleaned up;
- that the first responder training is modeled after the national emergency response system and not isolated to WIPP;
- that road funding has come into New Mexico because of WIPP-designated routes, and the funding provided was part of an agreement for WIPP to be located where it is;
- that there is continuous monitoring and sampling of waste, and waste is packaged differently if there is more contamination (i.e., CH versus RH waste); and
- the reprocessing of spent nuclear fuel as an energy source, for which France is a leader, but this is not being done in New Mexico.

2012 Interim Work Plan and Meeting Schedule

Committee members discussed the proposed work plan and meeting schedule. The change requested is for the committee to meet in Hobbs for two days, on September 5 and 6, and for that meeting to include a tour of URENCO. Otherwise, all committee meetings will be in Santa Fe on the proposed dates.

Adjournment

There being no further business, the committee adjourned at 2:50 p.m.

**MINUTES
of the
SECOND MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**July 19, 2012
Room 321, State Capitol**

The second meeting of the Radioactive and Hazardous Materials Committee was called to order by Representative Antonio Lujan, chair, on Thursday, July 19, 2012, in Room 321 at the State Capitol.

Present

Rep. Antonio Lujan, Chair
Sen. Richard C. Martinez, Vice Chair
Rep. Cathrynn N. Brown
Sen. Carroll H. Leavell
Rep. Jim R. Trujillo

Absent

Rep. Thomas A. Anderson
Sen. Vernon D. Asbill
Rep. Brian F. Egolf, Jr.
Sen. Stephen H. Fischmann
Sen. John Pinto
Rep. Shirley A. Tyler
Sen. David Ulibarri

Advisory Members

Rep. Eliseo Lee Alcon
Sen. William F. Burt
Rep. Jim W. Hall
Sen. Nancy Rodriguez
Rep. Nick L. Salazar

Sen. Rod Adair
Rep. Donald E. Bratton
Sen. Eric G. Griego
Sen. Gay G. Kernan
Sen. Lynda M. Lovejoy
Sen. William H. Payne
Sen. Bernadette M. Sanchez

Staff

Gordon Meeks
Renée Gregorio

Guests and Handouts

The guest list is in the meeting file, as are copies of all handouts and written testimony.

Thursday, July 19

Northern New Mexico Citizens Advisory Board

Ralph Phelps, chair, Northern New Mexico Citizens Advisory Board (NNMCAB), and Doug Sayer, chair of the Environmental Action Subcommittee, addressed the committee on the NNMCAB responsibilities, mission, contributions and recommendations. The board is a site-specific advisory board (SSAB) under the U.S. Department of Energy (DOE) that was formed to increase the direct involvement of local citizens in the DOE's environmental management (EM) remediation decisions at nuclear facilities in the U.S. Mr. Phelps said that the NNMCAB

is one of eight SSABs, and each CAB is associated with one of the laboratories across the country. These boards support the DOE in environmental restoration programs, future land-use issues, stewardship of lands and risk and budget issues, he added. The NNM CAB provides two-way communication as it interacts with citizens, the DOE, Los Alamos National Laboratory (LANL), federal agencies, associated advisory boards, Indian nations, tribes and pueblos, New Mexico's Department of Environment (NMED), local communities and civic organizations, Mr. Phelps indicated. He said that the NNM CAB is composed of 20 members who serve two-year terms and have a mix of backgrounds and experiences.

Among the NNM CAB's recommendations that Mr. Phelps spoke of are:

- well installations — members provided feedback, and LANL switched over to using alternate drilling methods that made monitoring sampling stronger and more reliable;
- accelerating removal of transuranic (TRU) waste from Area G to the Waste Isolation Pilot Plant (WIPP) site — the NNM CAB recommended removal of above-ground waste so underground waste could be remediated and, because of fire threat, LANL forged an agreement with the NMED to reschedule some of LANL's milestones on the consent order to accomplish this;
- using rail for moving waste — the NNM CAB provided information to LANL about rail transport, noting that shipment by rail eased truck traffic on highways and recommended the use of rail so long as the DOE consults with the affected local communities; and
- the budget — the NNM CAB supports baseline funding to ensure that LANL has the resources to stay on schedule with TRU waste disposal and compliance with the consent order.

Committee member questions and ensuing discussion included the following:

- clarification that it is low-level waste being shipped by rail;
- concern over the quality of water from the Buckman Diversion Project and assurance that LANL has a solid monitoring program for these wells, a good storm water program and protections in place for the Buckman Diversion Project;
- Santa Fe is not totally dependent on the Buckman Diversion Project for its water source, as the city also has wells, and there is mountain runoff on the east side;
- organizations that monitor the water for Santa Fe include the city and county, LANL, the U.S. Geological Survey, the Buckman Direct Diversion Project Board, the Army Corps of Engineers, the Bureau of Reclamation and federal and state fish and wildlife departments;

- cleanup priority is at Tech Area 54, where there is above-ground TRU;
- 3,706 cubic meters of waste have to be moved to WIPP, and this year, 150 shipments have been moved as of the end of June, with a target for 2012 set at 180;
- no accidents have been reported from the transportation of hazardous waste shipments by truck, and there have been 200 truck shipments this year;
- a suggestion that a regulatory compliance officer from the Buckman Diversion Project testify for the committee on its sampling and monitoring program;
- the difference between low-level and TRU waste is that the former requires deep burial in salt mines, but low-level waste is easier to dispose of as it is contamination from products used in working with radioactive materials, such as protective clothing;
- the number of barrels in a shipment depends on the activity of the material being transported, and the total radioactivity in a shipment must be acceptable for transportation to WIPP; and
- the budget of \$219 million was an approved budget from the federal government for EM work and did not involve money from city, county or state budgets.

Regional Coalition of LANL Communities

Sharon Stover, councilor for the Regional Coalition of LANL Communities, addressed the committee on the coalition's business until Santa Fe Mayor David Coss arrived. She said that the mediation of legacy waste at LANL is important to the coalition. She added that the coalition is interested in seeing that local governments speak with one voice to impact the removal of waste to keep communities safe throughout the region. She stressed the need for cleanup of legacy waste.

She stated that the coalition meets once a month and that much of the coalition's work impacts jobs in the region. She added that coalition members just returned from a trip to Washington, D.C., to speak with the New Mexico congressional delegation about the impact on jobs in the state from not cleaning up the waste.

Mayor Coss arrived and spoke of the coalition's need to be informed about issues at LANL, which affect both the city and county, and include the Buckman Diversion Project and the economic and environmental impacts of LANL. He stressed the need to interact with LANL, the DOE and local communities and said that he has been attending coalition meetings for two years and became chair of the coalition last week.

Committee member questions and ensuing discussion included the following:

- the need for the coalition to engage with the legislature and the state over issues such as the state's regulation of cleanup of legacy contaminants at LANL and the state's pivotal role in how communities relate to LANL;
- the importance of a continued relationship with the congressional delegation and having a unified showing for continued federal support, especially in relationship to lost jobs and the economic impact to the state;
- the coalition's role in keeping LANL's budget from decreasing even further;
- there is currently no agreement among communities on the Chemistry and Metallurgy Research Replacement Nuclear Facility (CMRR) Project, although the coalition is working toward being better informed about this facility, as CMRR could generate 1,000 jobs;
- the coalition needs to study the scientific, technical and engineering aspects of the CMRR and what its mission is;
- concern for the removal of both above-ground and underground waste to ensure a safe water supply; and
- although the DOE is funding the regional coalition, there is no assurance of continued funding from the federal government, and the local governments provide a funding source on a per capita basis.

Budgeting for EM at LANL

Pete Maggiore, National Nuclear Security Agency (NNSA), expressed the regrets of his colleague, Kevin Smith, who could not attend the committee hearing. He began by comparing the area of LANL to that of Washington, D.C., emphasizing the challenges that LANL's 268 miles of roads provide. He said that LANL's unique facilities, including nuclear, supercomputing, nanotechnology and dual axis radiographic hydrodynamic test facilities, draw the attention of researchers both nationally and internationally. He discussed LANL's energy security pillars, which include the impacts of energy demand growth, sustainable nuclear energy and clean energy initiatives. Mr. Maggiore reviewed the NNSA's organizational chart and spoke of the NNSA's formation having roots with people from New Mexico, including Senator Pete Domenici and Governor Bill Richardson, who was then the DOE secretary. He indicated that although the NNSA's organizational structure is complex, he believes that the restructuring has created a stronger structure. He added that the NNSA was created by Congress as a separate unit of the DOE, was established in 2000 and oversees the operations of the U.S. nuclear weapons enterprise.

Mr. Maggiore reviewed the EM mission and the scope of the NNSA, which is to complete the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development and production and government-sponsored nuclear energy research. He admitted this is a massive job, with a budget of \$5 billion to \$6 billion a year. He

said that the jobs are more complicated, take longer and cost more money than when the EM office was initially formed, mainly due to increasingly complicated technical and regulatory environmental challenges.

In reviewing photographs in the handout, Mr. Maggiore described several activities that take place at LANL in disposing waste and in remediating soil and ground water. He added that EM has been active year this year in "designing and constructing infrastructure to move waste off the hill quickly".

In citing progress to date, Mr. Maggiore said that approximately half of the 2,100 sites slated for cleanup are completed; that of the 26 material disposal areas to be cleaned up, 10 have been completed, with others in investigation phases; that a ground water monitoring network is in place; that substantial monitoring and sediment controls are installed; and that new records are set each year for TRU waste shipments.

He indicated that remediation projects funded by the federal American Recovery and Reinvestment Act of 2009 (ARRA) have all been completed and include decontamination and demolition of buildings, cleanup of land and installation of ground water monitoring wells. Also, the excavation of material disposal in Area B was completed with ARRA funding, he said.

Mr. Maggiore spoke about progress made in 2012 thus far, including a public presentation of the framework agreement, development and progress to date of the 3,706 cubic meters of TRU waste that need to be moved to WIPP, water protection and the ways in which the public is being informed.

He explained that the budget for the office of EM is worked on over the course of three fiscal years (FYs) simultaneously; for example, the FY 2012 budget would include budget implementation for the current FY, budget formulation with Congress for FY 2013 and budget planning with the DOE for FY 2014. He estimated the funding for LANL in FY 2012 to be \$2.25 billion, of which EM is about 8% of the pie at \$187 million. He added that in previous years, the EM office received \$212 million from ARRA, which has now been reduced to half that amount in this FY. He indicated that future funding is all subject to congressional appropriation and the challenge is not knowing what the appropriation will be and making decisions and plans anyway. The highest-risk-level work will be done first, he added, in such uncertainty.

Mr. Maggiore concluded his testimony with a look toward the future by stating that the foundational element of the NNSA's work will be a comprehensive EM database that will reside "in the cloud", or on the internet, and will be available to LANL managers and the public. This will enable the sharing of historical activities and impacts in a much more transparent manner. He spoke about the 50-year environmental stewardship plan's integrated vision for LANL and for the community.

Committee member questions and ensuing discussion included the following:

- regarding legacy cleanup, New Mexico got off to a later start than other states, and cleanup efforts have not been funded as much as other sites, but cleanup is happening and the laboratories have a lot of credibility riding on completing the legacy cleanup in a timely manner;
- newly generated waste needs to get to WIPP in a more timely and more efficient fashion;
- New Mexico receives one-third of the total NNSA budget for states;
- concern over funding for cleanup at LANL because it is less than other DOE sites;
- can New Mexico do anything to prompt the DOE to assist on focusing on safe and secure operations at LANL?
- New Mexico's success for a robust budget has to originate in Congress;
- in the past, appropriations have not come the state's way because of a lack of planning, but the state now has a demonstrated strategy, performance and plan;
- in terms of waste removal and handling, LANL is breaking records in moving cubic meters of waste out of Los Alamos;
- ARRA money of approximately \$360 million was spent in FY 2011;
- LANL has reprioritized sites to be cleaned up to get the highest-risk material dealt with first;
- there is a strong, long-term commitment to cleanup of LANL, so it is unlikely that LANL will become a site such as Rocky Flats;
- the state's supercomputing use by LANL; and
- investigation (as compared to cleanup) includes compiling historical data from a location, collecting soil and water samples and putting information into a report for the DOE.

LANL Energy Programs Overview

John Sarrao, program director at the Office of Science Programs at LANL, began by giving committee members an overview of his background. He spoke of energy's broad domain and that LANL focuses on three main areas: the impacts of energy demand growth, sustainable nuclear energy and clean energy. He talked about LANL and the DOE's view of working across a continuum, from the challenges of energy research, to discovery science, to applied research and to the technology itself. Mr. Sarrao indicated that LANL forms partnerships with several

organizations that focus on fundamental materials science, reactor simulations and advanced computing in order to succeed.

He added that hundreds of scientists arrive at LANL each year to complete research in its facilities. He mentioned the success of the New Mexico Consortium Biology Laboratory, a collaboration that includes LANL, the University of New Mexico, the New Mexico Institute of Mining and Technology and New Mexico State University, and is a facility for biofuels research led by scientist Richard Sayre. Mr. Sarrao also spoke of LANL's involvement in promoting the development of the small modular reactor (SMR) industry, with projects in research and development related to coolants for SMR applications as well as the development of site screening and tools for SMRs. He added that LANL is not advocating this industry, but it is providing the underlying science to address questions related to its development.

Committee member questions and ensuing discussion included the following:

- intellectual property issues related to fundamental research at the Office of Science Programs is straightforward, with a robust patent portfolio; applied science is more challenging, but the patent office is engaged in protecting its intellectual property rights;
- in terms of funding, of the \$2 billion overall budget, \$1 billion goes to the Office of Science Programs, with \$100 million in the applied energy portfolio;
- it is difficult to predict growth: in the short-term view, there are budgetary challenges, and in the long-term view, energy problems must be solved, so having a broad strategy is crucial;
- the New Mexico consortium is a collaborative effort that can handle larger-scale biofuel activity;
- seismic sources of hazardous materials releases will be provided by Mr. Sarrao;
- research on small electric power units that could serve small communities is being done by several companies, but LANL is looking at questions of waste storage;
- storage is really the issue when providing energy to smaller communities, whether it is photovoltaic or nuclear, and many companies are exploring this issue, but not LANL, which engages only in the underlying scientific analysis of such energy;
- LANL provides the science for modular reactors, which involves the challenges of waste cycles and placement of reactors;
- definition of "smart grid", which can actually track how much energy is being used and when, since the way energy goes into the grid varies depending on weather and environment; and

- in dealing with storage and transmission of alternative sources of energy, it is optimal to build in stability and "smartness" as the energy is being developed and revitalized.

Public Comment

Representative Lujan asked that all public comment be limited to five minutes. The first speaker, Michael Loya, said he has an environmental water background and has been a water advocate for some time, as his family members are farmers and ranchers from southern New Mexico. He described drilling methods to keep sampling cleaner, which was one of the last efforts of Senator Domenici and is known as casing-advanced drilling. He stressed that he spoke on behalf of the CMRR and believes that LANL has been a font of knowledge and cutting-edge technology. He advocated for the DOE's EM work and the work of LANL and stated that there is no plutonium coming down from the plateau and into the Buckman Diversion Project.

Joni Arends, executive director of Concerned Citizens for Nuclear Safety (CCNS), expressed her concern about the morning presentations and said that she would be submitting written comments. She stated that her organization is perturbed about the effects of the fires on the canyons in Los Alamos and, in turn, the subsequent effect on the water in the Buckman Diversion Project. She said that high priority sites can release contamination and that there is nothing to hold the water when there are serious flows, such as the ones in the Pueblo of Santa Clara of over 2,000 cubic feet per second. She added that the EPA's documentation of PCB contamination also causes CCNS members to feel apprehensive. She said that PCB levels are at much higher rates than the state can handle. She stated that storm events can and have carried contamination into the Buckman Diversion Project, despite the "turnoffs" for the system that do exist.

Adjournment

There being no further business, the committee adjourned at 1:10 p.m.

**MINUTES
of the
THIRD MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**September 5-6, 2012
Multipurpose Room, Bob Moran Building
New Mexico Junior College
Hobbs**

The third meeting of the Radioactive and Hazardous Materials Committee was called to order by Senator Richard C. Martinez, vice chair, at 10:16 a.m. on Wednesday, September 5, 2012, in the Multipurpose Room at the Bob Moran Building at New Mexico Junior College in Hobbs.

Present

Sen. Richard C. Martinez, Vice Chair (9/5)
Rep. Thomas A. Anderson
Rep. Cathrynn N. Brown (9/5)
Sen. Carroll H. Leavell
Sen. John Pinto (9/5)
Rep. Jim R. Trujillo
Rep. Shirley A. Tyler (9/5)
Sen. David Ulibarri

Advisory Members

Rep. Eliseo Lee Alcon
Rep. Donald E. Bratton (9/5)
Rep. Jim W. Hall (9/5)
Sen. Gay G. Kernan (9/5)
Sen. Lynda M. Lovejoy (9/5)

Guest Legislators

Rep. Richard D. Vigil (9/5)
Sen. Tim Eichenberg (9/6)

Absent

Rep. Antonio Lujan, Chair
Sen. Vernon D. Asbill
Rep. Brian F. Egolf, Jr.
Sen. Stephen H. Fischmann

Sen. Rod Adair
Sen. William F. Burt
Sen. Eric G. Griego
Sen. William H. Payne
Sen. Nancy Rodriguez
Rep. Nick L. Salazar
Sen. Bernadette M. Sanchez

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

Staff

Gordon Meeks, Legislative Council Service (LCS)
Renée Gregorio, LCS
Cassandra Jones, LCS

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file.

Wednesday, September 5

Committee members introduced themselves to the audience after Senator Martinez thanked New Mexico Junior College (NMJC) for hosting the committee, and he assigned Senator Leavell as acting vice chair for the meeting. Matt White, mayor of Eunice, welcomed the committee and wished the committee well on its tour the following day, adding that URENCO USA is a wonderful corporate neighbor that has brought in other businesses as well, which helps the local communities. Next, Dr. Steve McCleery, president, NMJC, welcomed the committee to Lea County and reviewed a few housekeeping items and introduced key staff. He noted the college's appreciation for the committee's choice of coming to Hobbs and, in general, to travel the state to see "the good things going on". He thanked committee members for the day-to-day work that they do as volunteer legislators and praised the bipartisan effort required to pass budgets. In response to questions about the college, Dr. McCleery stated that there are 3,900 students as well as 4,000 participants in the work force training program. He also mentioned the college's partnerships with corporate sponsors, such as Ford, and stated: "We look and feel a bit different than other community colleges across the state." He also said that a new partnership is beginning with Sacred Power, which is a green energy and wind and solar project slated for the west end of the campus. He added that this is in addition to a nuclear energy technology program partnership the college has with Lockheed Martin.

Waste Isolation Pilot Plant (WIPP) Status Report

Bill Mackie, institutional affairs manager at the Carlsbad Field Office of the U.S. Department of Energy (DOE), and Joe Franco, manager of the Carlsbad Field Office, gave a status update on WIPP. Mr. Mackie spoke of the WIPP team's seven associates, with the DOE leading the transuranic waste (TRU) program and science program, and the associates, including the URS Corporation, Los Alamos National Laboratory (LANL), Sandia National Laboratories, Carlsbad Field Office Technical Assistance Contractor, Transcom, Visionary Solutions and CAST Specialty Transportation, in supporting roles. (See handout for what each associate company is responsible for.) He added that WIPP's contract was renewed on April 20 of this year. He spoke of the diversity of WIPP's work force, which includes personnel in the fields of engineering, chemistry, geology, physics, safety, mining, emergency management and more. He

said that the work force has broad experience from the nuclear industry, which includes other DOE sites, nuclear power plants and the military.

He reminded the committee that WIPP is a national solution for the disposal of nuclear waste, and that WIPP is a repository only for TRU, which is left over from the research and production of nuclear weapons and includes clothing, tools, rags, debris and other items contaminated with man-made radioactivity. To answer the question of why WIPP is in Carlsbad, Mr. Mackie plainly stated that this is because of salt and the stable geology, lack of water, ease of mining and the plastic quality of salt that allows it to close in on the waste over time. He gave details on WIPP's underground panels, saying that panels 1-5 are enclosed, panel 6 is currently being filled and panel 7 has been mined and is ready to start accepting waste. He added that panel 8 has not yet been started, but it will be after waste is placed into panel 7.

Mr. Mackie went on to speak about the safety of WIPP's transportation system, and he said that over 10,000 shipments have been made over more than 12 million loaded miles without an accident that has resulted in a fatality or a release of radiation. He spoke of the stringent requirements to drive for WIPP and noted that WIPP uses some of the safest shipping containers on the road today. In addition, he said that since 1988, over 31,000 first responders have been trained both at WIPP and throughout the states affected by WIPP. Mr. Mackie said that he spends 60% of his time doing outreach across the country so that others understand what WIPP does.

He reiterated that the main concern at WIPP is safety. He defined the waste received at WIPP to be primarily contact-handled (CH) waste, which makes up about 96% of the disposed waste at the site and does not require additional shielding beyond the container itself because its radiation emission is less penetrating as compared with the remote-handled (RH) waste disposed of at WIPP. WIPP started receiving RH waste in 2007, he added. Other facts Mr. Mackie cited included that trucks cannot exceed 80,000 pounds of waste, that waste cannot be moved on weekends or at night and that trucks stop every three hours for 30 minutes at a time for a walk-in safety check—for fuel, for food and for comfort. Regarding cleanup of legacy waste across the U.S., Mr. Mackie indicated that 22 sites have been cleaned up, which include both Lovelace Respiratory Research Institute and Sandia National Laboratories in New Mexico.

On a regulatory note, Mr. Mackie said that WIPP is recertified by the federal Environmental Protection Agency (EPA) every five years and will continue to go through this process until WIPP is closed. As well, New Mexico's Department of Environment's (NMED) hazardous waste facility permit, which is required for the disposal of TRU mixed with hazardous materials, was renewed on November 30, 2010 and is a 10-year permit.

He spoke of the funds awarded to the Carlsbad Field Office through the American Recovery and Reinvestment Act of 2009 (ARRA), which amounted to \$172 million. With that, the office's goal was to create 400 new positions; in actuality, 696 new positions were created as a result of ARRA funding. In addition, ARRA accomplishments included the aforementioned

completion of legacy cleanup at many sites as well as the shipments out of Los Alamos more than doubling between fiscal year (FY) 2008 and FY 2010. Due to ARRA funding, WIPP was able to meet national cleanup goals by completing needed construction purchasing necessary equipment, he added.

Mr. Mackie discussed changes in the routing near the WIPP site that involves using Texas Route 176 through Andrews to Eunice, which later became an alternate route. WIPP employees began using this road on August 1, 2012, and the new route reduces the mileage to the site by 92 miles, he said. WIPP continues to maintain the original route, but until that route is certified and it is assured that the brine well will not become a sinkhole, WIPP will not use that route, he added. Also, in January of next year, the Department of Transportation will do a 4.2-mile reconstruction of the WIPP relief route going around the north side of WIPP.

Mr. Mackie indicated that the execution of the FY 2013 budget will be a challenge, that cleanup of waste at LANL needs to be accelerated and that the WIPP facility must be maintained above and below ground.

Committee member questions and ensuing discussion included:

- an initiative is afoot to store surface plutonium and dispose of it at WIPP, and although such plutonium may come in as CH waste stored in 55-gallon drums, if it contains isotopes, it would be put in an RH cask;
- two routes have been deactivated: from Southern California, Interstate 5 out of Lawrence Livermore across Interstate 40 and a portion of the route out of Buffalo, New York; also the route from Interstate 40 to Clines Corners will be deactivated after cleanup at Sandia National Laboratories is complete;
- the current evaluation for closure of WIPP is to start closure in 2030 or 2032; this would include five years to complete the closure;
- the blue ribbon commission came out with a proposal regarding putting high-level waste into WIPP and will come up with recommendations;
- there is no engineering reason not to greatly expand WIPP's underground area;
- there is a contingency system in place if the Transcom satellite tracking system ever becomes compromised that includes an alternate site that would allow tracking to be running again within two hours;
- a safety corridor is defined as an area of increased patrol, reduced speed and double fines in place;
- concern over the handling of surface plutonium and the production of mixed oxide (MOX) fuel and the fact that nuclear plants are not interested in re-engineering to do this;
- the question of pushing for plutonium to be buried at WIPP rather than turning it into fuel;

- a suggestion that a letter be written from the committee to the DOE urging a decision on the production of MOX fuel and the burial of plutonium versus turning it into fuel;
- shipments to WIPP travel continually from the generator site all the way to WIPP, with the exception of stopping for inspections, fuel and comfort, and driving is done in teams, with each driver having an 11-hour shift;
- after the ARRA funding expired and with attrition, current employment is down by 200 employees;
- the Interstate 40 corridor first responder safety training is still in process; prior to opening a route, the whole corridor is trained;
- there is an 86% turnover in first responder personnel in the U.S. today; the 16-hour course for first responders is continually provided and a compressed refresher course of eight hours is also available;
- a request to see documentation of the training provided by county across the state;
- one problem with the first responder training is that although it is offered, people cannot be forced to attend training;
- success in first responder training in the San Miguel County area has not been that high;
- both federal and state governments cannot mandate people to be trained;
- training can always be made available by WIPP for first responders;
- the state fire marshal will be contacted and asked to testify relative to certification requirements for volunteer first responders to get clarification on this issue; and
- shipments are tracked by a satellite system that tracks commercial vehicles, with operators at a central monitoring room at the WIPP site.

On a motion by Senator Leavell seconded by Representative Anderson, then Senator Ulibarri, the committee unanimously approved the minutes from the June and July meetings.

Carlsbad Environmental Monitoring Research Center — History, Mission and Status Report

Russell Hardy, director, Carlsbad Environmental Monitoring Research Center (CEMRC), began by giving an overview of his own work history and then the center's history. He described the CEMRC as a division of the Waste Management Education and Research Consortium, which is a subunit of the College of Engineering at New Mexico State University. He added that the CEMRC is a service-oriented research center that monitors air quality, and that the center was established to respond to any health and environmental needs occurring because of WIPP. The CEMRC began its work about two years before the WIPP site was established, and Mr. Hardy indicated that the CEMRC has not seen an impact on the environment as a result of WIPP.

He reviewed the CEMRC's organizational chart, which shows its 19 full-time employees and their positions, all of which report to the College of Engineering. Because the CEMRC also

leases space to LANL, approximately 35 to 40 people work at the center on any given day, he said.

In reviewing the CEMRC's finances, Mr. Hardy stated that the organization has a financial assistance grant from the DOE's Carlsbad Field Office that accounts for about 70% of all funding. He added that the CEMRC has to produce an annual report by the end of October, and he will make sure each committee member gets one. Other contracts in place include one with URENCO USA, LANL and other companies. (See handout for DOE funding to the CEMRC by category.)

In describing the CEMRC's operations, Mr. Hardy said that field technicians collect filters from two stations. The first, Station A, is the main exhaust shed for the facility at WIPP, which indicates any presence of plutonium or any leakages. Data from Station A are collected by the CEMRC's technicians on Monday through Friday, and WIPP personnel collects these data on Saturday and Sunday. He said that on Wednesdays, technicians pull filters from Station B. In addition, lakes are checked and soil samples are taken from about 16 sites annually, he stated. Through water and air sampling and trace metal analysis, the Environmental Chemistry Group determines what is present in the waste that WIPP receives in order to be sure contaminants are not being released back into the environment, he explained. Also, drinking water is collected from local water sources and in that analysis, he reiterated that concentrations of potentially toxic metals are all well below EPA limits. (See handout for charts that show specific concentration of metals.)

Mr. Hardy said that plutonium 238 is present because of a satellite that disintegrated in 1968 and broke apart, spewing its load of plutonium 238, which was its fuel source, and giving the air this background level. He described the "whole body count" eight-detector array that the CEMRC owns and uses to test radiation. The CEMRC offers this service free-of-charge to anyone in a 110-mile radius of the WIPP site. He added that other equipment, a four-detector array for lung counting, looks at the energy ranges for low-lung and high-lung activity. He stated that this capability of seeing such a wide spectrum was not present before the CEMRC existed. Mr. Hardy indicated that the number of tests done using the whole body count detector is declining due to the safety of the environment and the lack of fear at present. Mr. Hardy advocated for promoting this program nevertheless and said that the CEMRC also owns a mobile whole body count lab that could be used at remote locations in the case of a catastrophic nuclear event.

He spoke next in detail of the analysis done by the Organic Chemistry (OC) Group at the CEMRC, which provides an analysis of volatile organic compounds, hydrogen and methane present in WIPP's underground air. He said that 1,000 to 1,200 samples per year are counted. He also stated that the OC lab assisted Mosaic Potash by doing gas sampling and analysis in March of this year, following a significant collapse of a portion of one of its mines.

The radiochemistry program at the CEMRC monitors radionuclides in the vicinity of WIPP by taking samples of air, soil, sediment, surface water and drinking water and analyzing them, Mr. Hardy said. Although four instances of plutonium were detected from composite samples in 2003, 2008, 2009 and 2010, these were identified quickly, and the magnitude has been below compliance levels and was likely due to windy conditions. He said that the presence of plutonium is a result of fallout from global weapons testing, not from a leak at the WIPP site. He stated that to date, there is no evidence of any release from WIPP contributing to radionuclide concentrations in the environment.

Mr. Hardy said that the CEMRC has seen fallout from the Fukushima-Daiichi nuclear power plant in Japan beginning in March 2011, and that cesium and iodine were detected from March through May. He stated that the amounts were minor and 10,000 miles away, and the fact that the equipment could pick it up and report on it gives the CEMRC validity that its processes, sampling techniques and monitoring are accurate.

In reviewing the CEMRC's short- and long-term plans, Mr. Hardy said that a proposal has been submitted to the DOE to bring a gas analysis project back to Carlsbad that is now in Idaho, adding that the CEMRC can accomplish the project with less people and money. The CEMRC is also applying to the NMED for an upgrade to its radiation license. He said the CEMRC is refining its procedures in support of a future high-level waste facility. The CEMRC is also continuing to promote the "lie-down-and-be-counted program" to local residents, he said. In conclusion, Mr. Hardy reviewed the CEMRC's short- and long-term needs for equipment, facilities and staff.

Committee member questions and ensuing discussion included:

- the array of capabilities that the CEMRC has is unique in the industry; and
- the CEMRC operates under a five-year grant whose cycle begins again in 2014, and it will be funded until WIPP no longer accepts waste.

Carlsbad Brine Well Status Report

Jim Griswold, senior hydrologist, and Gabrielle Berholt, deputy counsel, Oil Conservation Division (OCD), Energy, Minerals and Natural Resources Department, gave a status update for the Carlsbad brine well that included the history of the brine well. Mr. Griswold spoke of the original brine well that went into production in 1978, then of the addition of a subsequent well completed the following year that enabled brine to be produced at three times the original rate. Due to failures, brine ended up being produced only in one well, and historic production of brine has been estimated at between six and eight million barrels, which is equal to an underground mined cavern volume of that same number of cubic feet, he said.

Mr. Griswold described the location of the top of the salt cavern, which is approximately 450 feet below the surface of the ground. The main issue is that catastrophic failure of the cavern could result in a large sinkhole and cracks in the surrounding earth, or gradual failure that results in surface subsidence of only inches, which could also cause significant problems.

One of the main problems is the critical location of the cavern, which is close to a rail spur, major roadways, the Carlsbad Irrigation District canal and various private properties as well as fuel tanks.

Mr. Griswold pointed out the footprint of the cavern in one of the drawings in the handout, which was measured using a magnetotelluric geophysical technique. The approximate north/south dimension is 1,700 feet and east/west is about 1,000 feet. The current working theory is that the cavern is trumpet-shaped and structurally not very stable. In the graphs in the handout, Mr. Griswold indicated that the dashed vertical yellow line corresponds to the date of last year's October committee meeting and all data points to the right of the vertical line represent information gathered since that time. (Refer to the handouts for graph details.) He explained a graph that shows subsidence or elevation levels (measured twice each month) and indicates a downward trend; a graph of surface tiltplates (measured weekly) that shows two tiltplates that appear to be accelerating in their movement; a graph of borehole tiltmeters that is a crucial piece in the early warning system that continues to show movement at variable rates; a graph of ground water levels in the aquifer situated several hundred feet above the brine cavern that vary based on precipitation, regional pumping and canal losses; and a graph of cavern pressure that shows continual growth in pressure, which indicates that the cavern is not in equilibrium with its environment. He said that if the brine cavern were to fail, the upward movement of brine into this freshwater aquifer would render a large amount of the ground water unusable. Also, due to regional drought conditions, water levels in the Carlsbad area have declined more than 17 feet since the winter of 2010 and 4.5 feet since this spring, he concluded.

Ms. Berholt reviewed the professional and technical services contract, and she indicated that after receiving much good feedback from the pre-proposal conference, there was a unanimous decision made to award AMEC the contract, which is now nearly finalized. She reviewed the scope of work in the contract, which includes site monitoring and an early warning system, geophysical characterization and a feasibility study. She added that the contractor will use all of this information to structurally characterize the cavern and reinterpret existing surveys. She said that stakeholders will be a key part of the feasibility study, such as the City of Carlsbad, the Carlsbad Irrigation District and the potash companies, and this study will be provided no later than April 2014.

Mr. Griswold then spoke about a microseismicity monitoring station as a means of supplanting the early warning system currently in place in Carlsbad. He feels that this technique can lend a lot to the process of locating seismic sources that are subsurface; it allows for direct detection of patterns of fluid movement, fracture development and compaction. This equipment monitors microseismic events to provide early warning of such failure and to develop structural imaging of the cavern itself so that remedial actions can be taken, he explained.

Committee member questions and ensuing discussion included:

- tiltmeters are placed outside the cavern area to get baseline data that are not connected to the cavern itself to ensure that any tilt is not more widespread;

- the importance of distinguishing that a tilt is not the result of a period of drought but is associated with the cavern, since sinkholes are often the result of drought periods;
- there is a significant need for brine in the oil and gas industry and it is clear that the depth increases from west to east;
- professional associations have looked at brine wells post-collapse to see differences; corrective actions, such as refilling the holes, are not possible, but microseismicity is; and
- no brine wells have been licensed in the past three years, and although a six-month moratorium was placed on any new brine wells after the second collapse in Carlsbad, the OCD has no intent to prohibit brine production.

Alternative Energy Innovations

Paul Laur, president, Eldorado Biofuels, presented the biofuel alternative for energy production. Eldorado Biofuels, a private company based in New Mexico, specializes in cost-effective treatment of industrial wastewater and the production of renewable algal-derived biofuel and bioproducts for a clean source of energy, food and water. The company treats oil and gas company-produced water and uses it for cultivating algae. Mr. Laur said that New Mexico is ideal for growing algae because of its sunshine and a surface area that consists of flat, non-arable land. In producing water, Mr. Laur said, the method used is to reinject water after the oil and gas is separated from it, and then to provide the oil producer with a disposal method of taking the water, treating it and diverting it into open ponds. He spoke of the tremendous infrastructure, including pipelines, electricity in the fields, nutrients for dairy farms and potash mines for potassium, for this process. He said that there is a training program at NMJC for technicians and other personnel needed for maintaining the facility. He added that it is permitted by the OCD for the use of produced water and by the NMED for growing algae and discharging treated water. The company's trademark algae is "Jalgae", from which it can extract about 30% oil and 70% biomass that can be converted to ethanol or put into the food chain or used for fertilizer. He ended by saying that algae farms could generate jobs.

Committee member questions and ensuing discussion included:

- to treat 10,000 barrels of water per day would require a facility of one square mile;
- the water to be treated needs to have a 30,000 parts per million salinity, and in looking for a suitable site, Eldorado Biofuels tested water from Farmington to Jal, in Artesia, West Texas, Durango and the Coyote Gulch area and settled on Jal because the salinity was 10,000 parts per million in one well and 21,000 parts per million in another;
- there are both freshwater and saltwater algae, and it is necessary to develop the competency to design a water treatment system that fits the available water to develop a large selection of algae strains;
- as there are not any statutes in place or precedence for this industry, there is a need for legislation based on science that addresses the algae industry; and

- New Mexico has natural advantages in this competitive arena, and the committee could look at ways to ensure that the state is competitive and environmentally sensitive.

Representative Brown made a motion for the committee to write a letter concerning the disposal of surplus plutonium at WIPP, and Representative Trujillo seconded the motion. The committee voted unanimously to have the letter drafted and to then consider it after final approval by the committee.

The committee recessed at 4:10 p.m.

Thursday, September 6

Committee members toured the URENCO USA facility after being introduced to the operations and technology there by Jay Laughlin, chief nuclear officer and head of technical services. Mr. Laughlin stated that URENCO USA holds the vision that the future needs nuclear power to meet the demands of sustainable global energy. He emphasized that safety is a priority at URENCO USA, and that the facility is both classified and secure. He spoke of the technologies used to separate uranium 235 and uranium 238 and said that uranium enrichment at the facility is done with centrifuges. URENCO USA is owned by the British and Dutch governments and two large German utility companies.

Adjournment

There being no further business, the committee adjourned at 12:35 p.m.

**MINUTES
of the
FOURTH MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**October 22, 2012
Room 321, State Capitol
Santa Fe**

The fourth meeting of the Radioactive and Hazardous Materials Committee was called to order by Representative Antonio Lujan, chair, on Monday, October 22, 2012, in Room 321 at the State Capitol.

Present

Rep. Antonio Lujan, Chair
Sen. Richard C. Martinez, Vice Chair
Rep. Thomas A. Anderson
Rep. Cathrynn N. Brown
Sen. Carroll H. Leavell
Sen. John Pinto
Rep. Jim R. Trujillo
Rep. Shirley A. Tyler
Sen. David Ulibarri

Absent

Sen. Vernon D. Asbill
Rep. Brian F. Egolf, Jr.
Sen. Stephen H. Fischmann

Advisory Members

Rep. Eliseo Lee Alcon
Rep. Donald E. Bratton
Rep. Jim W. Hall
Sen. Lynda M. Lovejoy
Sen. Nancy Rodriguez
Sen. Bernadette M. Sanchez

Sen. Rod Adair
Sen. William F. Burt
Sen. Eric G. Griego
Sen. Gay G. Kernan
Sen. William H. Payne
Rep. Nick L. Salazar

Staff

Gordon Meeks, Legislative Council Service (LCS)
Renée Gregorio, LCS

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file.

Monday, October 22

New Mexico Oil and Gas Industry Summary

Kent Cravens, New Mexico Oil and Gas Association (NMOGA), introduced Ocean Munds-Dry, an attorney with Concho Resources, to committee members. Mr. Cravens spoke of the major producing areas for oil and gas in the state, such as the Permian Basin in southeast New Mexico, which produces primarily oil, and the San Juan Basin in northwest New Mexico, which produces primarily natural gas. He said that he and Ms. Munds-Dry would be speaking about the undeveloped, or frontier, areas in New Mexico and that their main interest is to facilitate dialogue between the counties and the state as related to oil and gas development. He mentioned that Paul Gutierrez, executive director of the New Mexico Association of Counties, facilitated a meeting of several counties in the frontier areas, including Quay, Colfax, Santa Fe, San Miguel and Guadalupe counties. He added that Santa Fe County has created an ordinance but has made it cost-prohibitive to drill, which is the county's prerogative.

Mr. Cravens stated that there are approximately 30,000 jobs in the oil and gas industry and that Colfax, Guadalupe and Quay counties all want to create ordinances that will work well for their residents and facilitate responsible development. He added that between 35% to 40% of the state's general fund revenues are derived from oil and gas production and that New Mexico has the fifth-largest number of oil and natural gas fields in the country. He emphasized that if this resource's development is properly executed and implemented, the state could see a greater impact to the general fund as well as the Severance Tax Permanent Fund, which would in turn impact funding for capital projects and local government operations. Mr. Cravens spoke of the existing "patchwork" of county and municipal ordinances and said that often this creates conflict in development among the counties. The NMOGA seeks to open up a dialogue between the state and the counties to facilitate this process, as the NMOGA has a lot of members who would like to produce in the frontier areas of New Mexico and who also have assets in other states and have other choices. He specified that the NMOGA is after stable and predictable regulation across the board and that, for example, in Colfax County, there are no regulations for oil and gas, which is just as limiting as having too many regulations, because companies cannot know which direction the county will take. He spoke of the Oil Conservation Division (OCD) of the Energy, Minerals and Natural Resources Department (EMNRD) as one of the better regulatory arms that manages the state's resources and protects the environment through its regulatory process. Mr. Cravens emphasized that the NMOGA does not want to preempt the counties at all, but seeks a dialogue. He advocated for the means of production on oil fields, which are far below any ground water and for which casings are designed in metal and concrete below the water level. He described this production as a closed loop system and stated that there has never been an instance of water contamination from hydraulic fracturing. He said that the OCD's job is to perform regular inspections and establish requirements for maintenance. He concluded by saying that if an understanding between county commissioners and the legislature is needed, the NMOGA would be willing to facilitate that dialogue.

Ms. Munds-Dry stated that Texas has an interesting approach in its regulation of the liquefied petroleum gas industry, with language that does allow the state to "preempt and supersede" local regulation of oil and gas operations. In Texas law, it is not that counties cannot pass regulations, but counties must come before the railroad commission to ensure that the scheme is comprehensive and cohesive. Ms. Munds-Dry added that the NMOGA liked this approach.

Committee member questions and ensuing discussion included:

- clarification that the railroad commission in Texas makes the final decision as to whether a county adopts its rules and that the Texas statute is not specific to the oil and gas industry, but the idea could be carried over to other states;
- Lea County is working with other states' commissions and with oil- and gas- producing counties to help them understand how Lea County's oil and gas production is helping the state;
- the industry does make an effort to educate people as to how many jobs this could create in specific counties, including television commercials and building colleges of energy in the state's educational institutions, such as at San Juan College and New Mexico Junior College, where there are about 3,500 students focusing on oil and gas and energy production issues;
- more jobs would definitely be created with development of the oil and gas industry and there are vast untouched reserves in the state;
- technologies to drill have improved vastly to ensure that safe production and horizontal wells are possible now, which produce more from this one footprint than is possible in 30 to 40 vertical wells;
- in terms of horizontal drilling and land ownership and rights, it is often not individuals who own mineral rights and there are many "split estates" in New Mexico with one surface owner and a different mineral owner;
- Concho Resources ensures that developers have purchased or leased the mineral rights, and this structure is in place in the Permian Basin and the San Juan Basin. As it extends into the frontier areas, the practice of protecting the surface owner and the mineral owner will continue;
- there are 11,000 wells in Rio Arriba County, as much of the San Juan Basin is in that county, and there was a task force that put together an ordinance that the oil and gas companies could work with that protected its residents;
- specifics on the breakdown of the economic impact on counties that already have oil and gas production would be helpful to the counties that do not in making their decision. This information will be provided by the NMOGA;
- the main concerns regarding oil and gas production are land disturbance, ground water contamination and disposal of waste products, and the state needs to be clear, comprehensive and understandable in its regulatory process before asking counties for decisions and the New Mexico Association of Counties is the natural group to interact with counties;

- the necessity of developing the state's resources in a comprehensive, cohesive manner with provisions that are not restrictive; and the importance of the legislature working with the New Mexico Association of Counties to develop a model for county ordinances that can be used across the board;
- oil and gas industry development leads to a booming economy, such as in Lea County, and many areas of the state do not have well-paying jobs and the state needs to educate the county commissions as to how to develop this industry responsibly;
- county ordinances apply to private lands only, not federal or state lands;
- in New Mexico, there is a sense of commitment to the science behind the regulations, and the pit rule is very complicated scientifically, with the goal to be helpful to a lot of companies and individual producers in a way that will not negatively affect safety or the environment; and
- it is crucial to be sensitive to the state's diverse population and to include the local people's opinions toward the environment by expanding public relations to local areas.

The committee unanimously approved the minutes from the third meeting of the Radioactive and Hazardous Materials Committee on September 5-6 in Hobbs on a motion by Senator Leavell, seconded by Representative Alcon.

Electric Transmission for Renewable Resources

Varney Brandt, manager of government affairs, and Steve Fogel, assistant general counsel, Xcel Energy, spoke to the committee on energy transmission construction and networks as well as proposed legislation. Mr. Brandt reviewed Xcel Energy's nationwide reach, which includes association with plants in Wisconsin and Minnesota that cover the northern states and in Colorado, New Mexico and Texas that cover the southwestern states, and includes 3.4 million electric customers and 1.9 million gas customers. He highlighted generation resources and capacity, and he noted the existence of wind generation, coal power plants and numerous gas generating facilities, such as the Hobbs, Maddox and Carlsbad plants in New Mexico. Mr. Brandt said that the service territory is 50,000 square miles with 100,000 customers in New Mexico that comprise 14 communities in the southeastern part of the state and the industrial load, including the URENCO site, the Waste Isolation Pilot Plant (WIPP) site and the cheese factory, which are all served by Xcel Energy.

Mr. Brandt said that there are transmission lines that extend across state boundaries that Xcel Energy does not necessarily serve and there are 6,600 miles of high-voltage lines in Texas, New Mexico, Oklahoma and Kansas that equal about \$1 billion in gross value. He described the evolution of transmission nationwide: initially, each community had its own system; then, investor-owned facilities were developed; then power companies worked regionally after World War II; and now, there is the national grid. Xcel Energy's transmission lines and infrastructure were built to serve existing customers; many utilities do not have the infrastructure to handle more customers, he added. In referring to the handout, Mr. Brandt indicated that the red lines of the transmission network connect New Mexico with El Paso Electric and also go through Kansas, Oklahoma and Texas. He said that the Xcel network is open to any power company's use. He

described the power grids across the U.S., which are divided into eastern, western and Texas grids, and are further divided into regional grids in these areas, such as the Southwest Power Pool (SPP) transmission grid. Mr. Brandt said that the SPP's authority is one of the reasons that new legislation is being proposed. He went on to explain that the SPP has an internal process in which it identifies projects for generation and transmission, shows how it integrates renewables and how it can balance the generation and loads in an area. He added that the SPP has a long-range plan that covers 10 and 20 years and that the SPP board is asked to approve projects that Xcel Energy identifies and, once approved, a notice to construct is issued. He said that states have the authority to allow the incumbent utility to exercise a right of first refusal (ROFR) and build the lines and that this ROFR is important to the state to maintain its reliability to its customers and to keep costs down.

Mr. Brandt described the large projects planned, permitted, constructed or in service in the Southwestern Public Service Company's (SPS) system. He said that the benefits of the SPP include cost, additional power in the peak season, improved reliability and new markets for wind power. He added that Xcel Energy is interested in the ROFR because of the cost benefit. Mr. Brandt then reviewed the SPS's capital spending over time in terms of production, transmission and distribution.

Mr. Fogel then spoke about the ROFR proposal. He said that historically, a utility could build transmission lines in its operating area, but last year, the federal government issued an order that takes away the utility's right to build transmission lines in its area unless the state has established policy. The proposal asks that the State of New Mexico give the local utility the right to have the first opportunity to build transmission lines in its area, he explained. In elucidating benefits to the state for doing so, Mr. Fogel noted the following: the state's regulatory oversight structure is maintained; the quality of transmission service to New Mexico customers is maintained; and it is less expensive for New Mexico customers if a New Mexico utility builds the lines. He said that the bill proposal would add a new section to the Public Utility Act that makes state policy clear in terms of a local utility having the first right to construct, own and maintain transmission facilities.

Committee member questions and ensuing discussion included:

- if New Mexico does not pass the ROFR, the main impediments are that the state could not maintain such a transmission line; the Public Regulation Commission would have no authority over the operator of that line to encourage its maintenance and avoid outages; and the cost would likely be higher;
- the neighboring states of Texas and Oklahoma and other Xcel Energy service areas have passed legislation that gives ROFR to local utilities;
- the bill as proposed does not affect location permitting or eminent domain;
- renewable generators often build their own fields and distribute to one of Xcel Energy's substations; although the line does not necessarily become part of the SPP, it is still possible for these lines to be built to connect with Xcel Energy;
- withdrawal of the ROFR affects public utilities and cooperatives identically;

- the cost for building new lines is absorbed regionally, not by individual customers; and
- the SPP takes into account new renewable generation proposals and orders lines accordingly, which should ensure New Mexico's place as renewable energy technology develops.

Senator Leavell motioned endorsement of the ROFR bill as a committee bill, and Senator Lovejoy seconded the motion, which the committee then unanimously approved.

New Mexico Renewable Energy Transmission Authority Status Report

Jeremy Turner, executive director, and Angela Gonzales-Rodarte, assistant director, New Mexico Renewable Energy Transmission Authority (RETA), gave a status report on the RETA. Mr. Turner began by saying that the RETA has eight state-level authorities, was statutorily created in 2007 and is governed by a seven-member board. He described the RETA's three grids that are interconnected and said that the Tres Amigas project proposes to add additional grids, which the RETA supports. He added that the RETA wants to create an export market similar to the oil and gas industry. He described the Regional Transmission Organization's (RTO) structure, how electricity is moved across large interstate areas and how costs can be spread out across a wider base. He spoke of how the Federal Energy Regulatory Commission Rule 1000 was set up to address cost allocation and to spread costs across state lines, which does not currently exist. In New Mexico's grid, he added, a lot of lines currently exist, and the RETA has ideas about increasing their reliability.

In speaking about New Mexico's providers, Mr. Turner indicated that each is set up to provide reliable, cost-effective distribution of power to its customers. (See the handout for a listing of these providers.) He added that New Mexico still enjoys some of the lowest rates in the nation and that the work of utilities and cooperatives is to provide reliable service to customers without making a profit. Mr. Turner added that New Mexico has significant opportunities in wind and solar, with better resources than originally thought and with power now more economical to produce. He said that nothing competes with natural gas at present, but that this will change.

Mr. Turner spoke of many regional projects, including a central New Mexico collector system, a Centennial West line from New Mexico to California, the Lucky Corridor line in northern New Mexico, the southline, the Tres Amigas superstation and the Sun Zia line, although he said there are no agreements in place yet. (Details on each of these projects are provided at the end of the handout.)

The RETA commissioned Los Alamos National Laboratory to do a study to evaluate how to better utilize the state's existing infrastructure rather than build new infrastructure, Mr. Turner said. He added that this study should be expanded if the RETA can get additional funding. He said that the RETA is taking a high-level look at exporting power to other parts of the western U.S. as well as how to send power east. The RETA also has the goal of several grid improvements across the state, he indicated.

Ms. Gonzales-Rodarte spoke about the types of support that the RETA can provide that include a letter of support, such as it did for the Blue Mesa Energy project in Quay County, as well as the RETA's staff providing memorandums of understanding as it did for the Centennial West and Lucky Corridor projects. She delineated the kinds of financial assistance available through the RETA, which include the issuance of bonds, such as for the High Lonesome Mesa Wind Farm project, which brought in \$14 million for Torrance County schools. The RETA can also enter into lease agreements, such as with Goldman Sachs Global Infrastructure Partners, which she said was the first public-private partnership in which the RETA engaged. Mr. Turner added that the RETA is looking at five more years to get this project up and running due to funding difficulties.

The RETA has received \$2 million from the legislature, Mr. Turner said, the last of it appropriated in 2009. He assured the committee that the RETA has been diligent in conserving its funds and that the RETA has received 29% of its total operation costs from private resources. He believes that the long-term success of the RETA will come from public-private partnerships. Mr. Turner reviewed the RETA's budget for fiscal years 2012 and 2013 and said that the RETA would be asking the legislature for more funding in the upcoming session. He assured the committee that RETA has already let one staff person go and that the organization is being very careful with its spending.

He then spoke of the future of the RETA and said that there is an opportunity to create a complementary industry and market to the oil and gas industry. He said that the RETA wants to continue to bring substantial economic investment opportunities to the state. He ended by saying that the RETA would be requesting \$395,000 from the legislature and that the RETA's goal is to become self-sufficient within five years.

Committee member questions and ensuing discussion included:

- the status of the Tres Amigas project is that the RETA encouraged it to submit an application, and, after deliberations, Tres Amigas did not think that there was enough value from the RETA's standpoint to enter into an agreement, but the transmission lines fit well into this project. Although the RETA does not have a formal arrangement with Tres Amigas, it is extremely supportive of the project, which now has secured funding and is working on an industrial revenue bond;
- tribal lands in central New Mexico include the Pueblos of San Felipe, Santa Ana and Zia, and the RETA has been engaged in long discussions with each and resolutions have been passed authorizing the pueblos to enter into negotiations and contracts with the RETA;
- the more storage the RETA has, the more costs are reduced;
- the RETA is the administrator of its own debt, not the state, and if the RETA can no longer exist because of a lack of funding, then the debt would have to be taken over by another entity; and
- the RETA will supply the committee with information on how many wind generators there are in New Mexico.

First Responder Training

John Standefer, state fire marshal, introduced the following staff members to the committee: Vernon Muller, deputy state fire marshal; Dolores Baca, WIPP coordinator; Reyes Romero, deputy state fire marshal, Firefighter Training Academy Bureau; and Brad Brunson, instructional staff supervisor. As Mr. Standefer described available training, he began by saying that the ongoing training in Socorro is largely WIPP-specific. He described the training programs for the Firefighter Training Academy as divided into three areas of competency building: hazardous materials awareness, operations and technical. He added that with WIPP and radioactive issues, other requirements exist that are more specific. The training is funded through the EMNRD and is offered at no charge to fire departments statewide. He said that awareness and operations courses are given continuously, with one offered every month; one-half are offered in Socorro, the other one-half on the road. In 2011, 35 awareness and operations courses were offered, he added. The technician course is much more specific and involves equipment that is costly, and there are a limited amount of fire departments that operate at this level, so not as much training is offered in this area. He stated that 40% of all courses are accomplished in the field and that many of the courses can be offered on request if there are enough students. He said that on the WIPP route itself, there is training available. In addition, there is also pass-through funding from the EMNRD and assistance from homeland security to assist in providing seed money and local agreements with cities and counties on the WIPP route.

Committee member questions and ensuing discussion included:

- the state fire marshal has a relationship with Permian Basin, but does not use its facility for training; rather, the state fire marshal can provide training, and then those trained can come into the state system for testing and certification;
- volunteers are included in the certification process, which has to meet national standards, and the training academy does outreach to communities, uses teachers within the department and reports that the percentage of success between career and volunteer firefighters is comparable;
- under current International Organization for Standardization (ISO) ratings, District 7 in Bernalillo County has a rating of ISO 4, which is one of the best;
- firefighting response has improved over the past several years due to increased fire suppression efforts as well as an understanding between the work of municipal and rural firefighters and wildland firefighters that has led to increased communication and cross-training of firefighters;
- clarification was requested as to how the Fire Protection Fund could be spent, and what would go to wildland protection or for municipal and rural firefighting;
- with federal assistance, the state's radio frequency system was improved to include more than one radio frequency; and
- the state fire marshal can be in a mediating position between volunteers and career firefighters in terms of rights as well as in terms of expenditures at the county level.

Adjournment

There being no further business, the committee adjourned at 2:05 p.m.

**MINUTES
of the
FIFTH MEETING
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**November 28, 2012
Room 321, State Capitol
Santa Fe**

DThe fifth meeting of the Radioactive and Hazardous Materials Committee was called to order by Senator Richard C. Martinez, vice chair, at 10:00 a.m. on Wednesday, November 28, 2012, at the State Capitol.

Present

Sen. Richard C. Martinez, Vice Chair
Rep. Thomas A. Anderson
Sen. Carroll H. Leavell
Sen. John Pinto
Rep. Jim R. Trujillo
Rep. Shirley A. Tyler
Sen. David Ulibarri

Absent

Rep. Antonio Lujan, Chair
Sen. Vernon D. Asbill
Rep. Cathrynn N. Brown
Rep. Brian F. Egolf, Jr.
Sen. Stephen H. Fischmann

Advisory Members

Sen. Rod Adair
Rep. Eliseo Lee Alcon
Rep. Donald E. Bratton
Sen. Gay G. Kernan
Sen. Lynda M. Lovejoy
Sen. Nancy Rodriguez
Rep. Nick L. Salazar
Sen. Bernadette M. Sanchez

A

Sen. William F. Burt
Sen. Eric G. Griego
Rep. Jim W. Hall
Sen. William H. Payne

Staff

Gordon Meeks, Legislative Council Service (LCS)
Renée Gregorio, LCS

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Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file.

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Wednesday, November 28

International Isotopes Status Report

Steve Laflin, chief executive officer and president of International Isotopes, Inc. (I³), introduced the operations and procedures of his company to the committee. As the first commercial depleted uranium facility to be built in the United States, the facility will produce high-value fluoride products during its deconversion process. The company's focus on recycling materials and saving energy is crucial to its "green" mission. He said that a site for the facility has been selected in Lea County and that Nuclear Regulatory Commission (NRC) licensing has been achieved. He described the nuclear fuel cycle, especially the part that URENCO, Inc. plays in uranium enrichment to make uranium useable for fuel reactors. The enrichment of uranium produces depleted uranium, or "tails", a byproduct that his company will address, Mr. Laflin added. In giving more specifics, Mr. Laflin stated that: 1) the enrichment process increases the concentration of U-235 from .7% to 4.5%; 2) it takes 10 pounds of uranium to produce one pound that is useable for fuel; and 3) a typical reactor (1,000 megawatts) requires about 37,000 pounds of enriched uranium per year, and this results in the production of approximately 485,000 pounds of tails.

He said that with the expiration of the "megatons to megawatts program" in 2013, there will be a new opportunity for enrichment facilities in the United States. He referred to the immense stockpile of depleted uranium that has been stored for nearly 50 years already and how I³ would offer services to process these tails into something of value. In giving a picture of uranium enrichment in the United States today, Mr. Laflin indicated that URENCO, Inc. is the only company currently engaged in this process, although there are three other companies in varying stages of development. He said that URENCO, Inc. is also ready to grow and expand if the other companies do not work out and that I³ will build alongside URENCO.

Mr. Laflin reviewed the process of bringing in uranium hexafluoride (UF₆), pulling fluoride atoms off that material and producing fluoride products. He said that the end product of his company's processing is uranium oxide, which is a natural uranium and, as such, is chemically neutral and not radioactive. He emphasized that the I³ facility brings material in, processes it and then sells it off; I³ is not a storage facility for any waste. He talked about the use of fluoride products in such product industries as microelectronics, refrigerants, synthetic lubricants and pharmaceuticals.

Mr. Laflin explained how I³ acquired the assets of the only complete deconversion plant in the country in 2008 and disassembled it to move it to New Mexico. The formal design work shows significant advances, he mentioned, but most of these are proprietary at present. He spoke about the licensing requirements of the NRC and how stringent the safety analysis is — the same procedure through which nuclear reactor facilities go. He explained this process as asking all the "what if" questions to calculate hazards and base corrective actions on the likelihood of such events occurring. He spoke of identifying the hazards, ranking them and sorting out a course of mitigation. In this design phase, he said, his company identified all the systems and functions it

would depend on to maintain safety; drew boundaries around systems it would rely on to demonstrate quality and safety to regulators; and trained its operators. He added that even though I³ is handling uranium, the plant is a chemical processing plant and no chemical plant in the United States has this level of safety built into it.

In reviewing the accomplishments of I³, Mr. Laflin emphasized the success the company has had in garnering state support through the Department of Environment (NMED) and the governor's office because of I³'s emphasis on communication with all involved. (See a detailed time line in the handout.) In conclusion, Mr. Laflin stated that the NRC issued a 40-year construction and operating license as a result of I³'s efforts. He then spoke of the plant layout plans and the choice of modular construction to separate out processes and buildings and to give I³ the ability to grow.

In reviewing environmental impacts of I³'s process, Mr. Laflin said that there are uranium and fluoride air emissions and that because of this, all effluent systems are triple filtered at the facility. He added that no filters are 100% effective and that the uranium emission exposure is at five millirems per year, which is measured assuming 24-hour-per-day exposure directly at the fence line of the facility. He clarified that one would receive about half as much radiation at the fence line as one would receive living in Santa Fe.

Mr. Laflin gave an overview of radon levels in the state, with the north central region exhibiting a high annual dose and the rest of the state falling in the moderate range. With regard to fluorine air emissions, he indicated that the largest sources are from coal-generating stations. In terms of water usage, Mr. Laflin said that the facility's usage is minimized through recycling and is estimated at fewer than 10,000 gallons per day. In addition, he said that there is no discharge of processed water into the environment — all of it is recycled and reused. He added that the sanitary wastewater will be treated and discharged onto the property for small nursery or agricultural product use.

With a project cost of \$115 million, I³'s benefit to New Mexico will be substantial, and that benefit includes an education reimbursement program at 100%, about 250 construction jobs and 125 full-time professional staff positions. Mr. Laflin indicated that the project will put New Mexico on the map because a manufacturing source of fluoride products does not yet exist in the United States. He added that with I³'s 40 acres near the middle of a full section of property, there will be plenty of room for other companies to co-locate alongside I³.

Mr. Laflin also spoke about the financial difficulties the nuclear industry faces after the Fukushima Daiichi nuclear disaster. He said that Southeast Asia looks like the next growth place for nuclear energy. He spoke of I³'s biggest limitation to funding as being the NRC license itself, but now that the NRC licensing has been obtained, I³ is working hard to build this project. The only permit remaining in New Mexico is the ground water permit, he added. He said that construction of monitoring wells would start after January 1, and once financing is in hand, construction would begin. I³ plans on being in full operation by the middle of 2014. Mr. Laflin

concluded his presentation by stating that this project fills a void in the fuel cycle, that it deals with waste in a proactive and environmentally friendly way, that it provides employment for New Mexicans and that safety and environmental protection is I³'s number one concern.

Committee member questions and ensuing discussion included:

- the Idaho operation differs from I³'s new facility in that it has been functioning for 12 years and it produces nuclear medicine products;
- the current number of nuclear power plants permitted at present in the United States is 103, and four new plants are under construction;
- depleted uranium is initially owned by URENCO, Inc., or the enrichment company, then the title changes to I³ when it takes it for processing, then is transferred again to the United States Department of Energy after processing;
- UF6 is only handled when it is in a solid state;
- I³'s customers include a large distribution company that I³ contracts with for distribution of hydrochloric acid and another company it contracts with for its fluoride products;
- I³ supplies the raw fluoride product, such as a fluoride compound gas, and then contracts with companies that manufacture, for example, synthetic lubricants;
- southern New Mexico was chosen by I³ as its location for this facility largely because it is a community already involved with the nuclear industry and was welcoming;
- out of 125 jobs at I³'s new facility, 75% are technician-level jobs for which the average compensation is an annual salary of \$40,000 to \$80,000, which includes full medical benefits; and
- uranium is a global business, with most of it being mined in Canada alongside the needed chemical cleanup and purification.

Approval of Minutes

The minutes from the fourth meeting of the Radioactive and Hazardous Materials Committee, which met on October 22, 2012, were unanimously approved on a motion by Representative Anderson, seconded by Representative Tyler.

Corrective Action Fund Status Report

Jeff Canney, Legislative Finance Committee program evaluator, gave a presentation on the status of the Corrective Action Fund (CAF), which provides for financial assurance coverage to take corrective action in response to a petroleum release, to pay for the costs of a minimum site assessment, to pay the state's share of federal leaking underground storage tank trust fund cleanup costs, to make payments to or on behalf of owners and operators for corrective action, to match federal funds for underground contamination cleanup and to address water needs. Mr. Canney indicated that the goal of his findings is to provide accountability and strength in government processes. He stated that petroleum as a hazardous waste can cause contamination to ground water and should be of interest to everyone. Referring to his brief, Mr. Canney highlighted figures leading to annual "revenue by the truckload". With 1.4 billion gallons of gasoline consumed per

year in the state, and with a loading fee of \$110 per 8,000-gallon delivery, which goes into the CAF, the fund earns more than \$18 million per year.

Mr. Canney reported that most of the state's 3,880 underground storage tanks (USTs) have or will release petroleum into the environment through spills, overfills or tank system failures. The Petroleum Storage Tank Bureau (PSTB) of the NMED is responsible for overseeing administration of the CAF and for tank inspections and cleanup. Among the key findings, which focus on spills from the USTs, Mr. Canney's report indicated: 1) 66% of USTs were in compliance with regulations, which is behind the national average of 71%; 2) remediation of 739 contaminated sites would cost the state about \$263 million; and 3) the PSTB process for remediation does not follow federal Environmental Protection Agency (EPA) standards in regard to expedited site assessments and pay-for-performance contracts. Mr. Canney referred to Table 2 in his report, which shows New Mexico's UST compliance measured against the national average, and which indicates a gradual improvement over time in the national average and a declining trend in New Mexico's averages, with figures bottoming out in 2008 and 2009 when the PSTB introduced higher standards. He said that an upward trend should continue and indicated that the "prohibition of delivery" amendment to regulations in New Mexico, which prevents noncompliant operators from receiving gasoline deliveries, is a success for the state. He added that data in Table 2 are reported to the EPA and are included in future performance reports.

In a table showing cleanup inventory, Mr. Canney noted that ending inventory dropped from 784 to 722 between 2006 and 2011 and that the net reduction percentages indicating progress drastically slowed in those same years. In addition, in 2009, 85 sites were added back into the inventory. In showing graphs of both national progress and New Mexico progress in cleanup measures, which are both reported to the EPA, Mr. Canney said that these also need to be included as a state performance measure. He added that New Mexico remediates both the soil and the ground water below it, which contributes to higher cost and longer remediation times. He said that more than 700 sites remain to be remediated.

Mr. Canney mentioned that because the PSTB's site assessments are not done in a complete manner, the planning of the site's remediation and the selection of appropriate technology is not accomplished in a fashion that rewards contractors for reaching cleanup goals rather than for completion. In addition, the PSTB does not disburse payments to vendors based on contamination level reduction and hires vendors in a way that removes incentives for quick remediation by not basing payment on performance.

He spoke of the Grants Triple Site as the top priority for the PSTB and as one of the most expensive remediation projects in the state, for which Brown Environmental, Inc., won the bid. Mr. Canney talked about the Triple Site cleanup contract, which amounted to \$1.39 million, expanded to a four-year project and is still active. He added that the EPA should have done a site assessment first and then awarded vendors for their speed in finishing the project. He then mentioned 24 states that either have retired or intend to retire their CAFs.

Featured in Table 14 of the report is the allocation of the CAF in New Mexico, and Mr. Canney stated that the United States Government Accountability Office reported that New Mexico transfers more out of its CAF than any other state for purposes other than the UST program. He showed in a graph format the uses of CAF revenues, noting that 55% of the fund is available for remediation purposes. Mr. Canney then spoke of the current UST inventory, which is at 739 sites that could be eliminated by 2032 at the cost of \$263 million. He said that the NMED's goal is to close 30 sites per year and that once these spill sites are cleaned up, the state could move this funding to focus on other key areas.

Mr. Canney mentioned that the PSTB was without a chair and had not met for a long time, but fortunately will meet on Friday, December 14, 2012. Among the reporting and accountability recommendations that Mr. Canney's report advocates are: 1) report quarterly compliance percentages; 2) report the number of cleanup sites in inventory and prioritize those sites; 3) report annual goals by priority for the number of closed sites from inventory; 4) report annually the projected year for the elimination of cleanup inventory; 5) conduct site assessments prior to executing work plans; and 6) execute pay-for-performance contracts and work plans. (See handout for details of these recommendations.)

Committee member questions and ensuing discussion included:

- Mr. Canney would like more accountability in compliance and cleanup measures; regulations to prevent and stop a leak if it occurs; a reporting mechanism in place for the state; and a way to encourage speed in remediation of sites; and
- incentives might be needed for fast cleanup of the 700-plus sites that need remediation, and the NMED could institute goals on yearly achievement as a means of accomplishing cleanup of these sites.

On request from a committee member to hear the NMED's response, Jim Davis, director of the Resource Protection Division, NMED, stated that the PSTB is within the division's purview and that he also served as bureau chief and feels that the program is mischaracterized by Mr. Canney's report. He said that New Mexico regulates above-ground storage tanks, too, which is one-third of the program. He said there are more than 800 sites still on the books, but there were 3,000 sites at the beginning of the program.

Mr. Davis stated that there are two types of storage tanks: "those that have leaked and those that will". He also said that although new releases are diminishing, the NMED still finds legacy releases — many along Interstate 40. He spoke of how difficult it is to plan for the sort of releases that do occur, such as releases from closed gas stations or releases at the new Santa Fe County Courthouse in Santa Fe, where old gasoline from gas stations operating in the 1930s to 1950s had to be cleaned up. Mr. Davis argued that the cleanup program is doing exactly what it was designed to do. He said that the NMED is not paying for the remediation currently underway at Kirtland Air Force Base, where there was the largest petroleum release in the state's history, which began in the late 1950s and extended until it was discovered in 1999. He added that the United States Air Force is paying for this remediation under a pay-for-performance contract.

Committee member questions and ensuing discussion included:

- the NMED stated that the procedure for cleanup begins with a site assessment paid for by the company and the fund, then design on active remediation follows, and then the NMED issues a request for proposals for the work;
- in cases where the owner of the property that needs cleanup is in question, the state takes over responsibility;
- there is a need to protect the future of the state by being cautious about industries that cause remediation to be necessary in the first place, with many of the top-priority sites caused by gas spills during the boom of the Grants area uranium industry;
- the NMED has a huge task on its hands, and there are always a lot of surprises in the business of remediation;
- the loading fee is in Taxation and Revenue Department statutes and is collected at the loading rack, of which \$110 of the \$150 per load goes to the NMED; of this, 30% is used to match federal grants for water protection programs and for PSTB operations; and 10% to 12% goes to direct remediation;
- the state needs to train operators for emergency action to prevent a catastrophic petroleum release, and the NMED has seen remarkable progress in terms of the knowledge of operators and the strong collaboration with the petroleum industry in operator training; and
- it is the work of the PSTB to make sure the CAF is spent properly.

Sinkholes

Dr. Courtney Herrick, Sandia National Laboratories, gave the committee an overview of sinkholes, which are formed by the dissolution and collapse of a cavern roof and are sometimes natural and other times man-made. He said that in a true sinkhole, the soil keeps going down into the hole. Dr. Herrick stressed that sinkholes occur in evaporite rock regions, and they can form gradually or suddenly. He added that sinkholes are found all over the world, as evaporite rocks lie underneath over 20% of the world's land surface and underneath approximately 35% to 40% of the United States. Noteworthy in what Dr. Herrick pointed out is that a large portion of New Mexico shows a prevalence of evaporite rock. The natural formation of breccia pipes and mining have both created sinkholes.

He gave details as to how sinkholes are formed in other parts of the world and said that sinkholes can be stabilized naturally. Dr. Herrick defined stability as a function of thickness of the roof, width of the cavity, rock mass strength and the stress condition of the ground. He discussed how structural analysis of a cave roof is handled and said that rock mass strength is difficult to assess. Dr. Herrick discussed several charts in his handout that correlate roof thickness and cavity span in relationship to the failure of intact beams and that compare roof thickness, cavity span and rock mass rating. (See handout for details of these charts.) He gave a rule of thumb for cavity formation, which speaks of the ratio between cavern diameter and cavern depth in relationship to cratering.

He then discussed the rock mechanics' view of caving, which has been identified as chimney failure, block caving and plug subsidence. (These are shown in detailed drawings in the handout.) Dr. Herrick described the major reason for sinkholes as being a loss in the water table and advocated controlling water depth. He said that sinkholes can be prevented by not allowing unsaturated water to flow into the evaporite rock. This can be accomplished, he added, through geologic mapping of the subsurface; assessment of the area's hydrogeology; designing engineering systems to prevent unwanted penetration; proper design, construction and maintenance of mines; and proper casing or sealing-off of beds when boreholes are drilled into evaporite rock.

D Committee member questions and ensuing discussion included:

- there are many cases of sinkholes being prevented by keeping a roof from caving in through monitoring pressure in the cavity continuously to ensure that a sinkhole is not forming; and
- in making general recommendations about the brine well issue in Carlsbad, Dr. Herrick said that making assessments after the fact is a lot more difficult than before, but he would begin looking at characterization of the cavity through recommended methods, such as three-dimensional seismic chromography, ground penetrating radar and metallurgy.

Mercury-Filled Light Bulbs

Steve Pullen, manager, Hazardous Waste Bureau's Compliance and Technical Assistance Program, NMED, gave the committee an overview of the history, regulations, mercury reduction plans, recycling programs and environmental management of mercury light bulbs. He mentioned the two types of mercury bulbs: fluorescent tubes and compact fluorescent light bulbs (CFLs). He said that these bulbs are replacing incandescent bulbs, as they are 10 times more energy-efficient. The amount of mercury in these bulbs varies from three milligrams (mg.) to 46 mg., as compared to the amount of mercury in old thermometers, which was 500 mg., he added. He also said that production is moving more toward "green" bulbs, with less and less mercury in the new bulbs. He spoke of mercury's numerous forms — solid, vapor (low vapor point) and liquid — and said that in bulbs, mercury exists in its elemental form. He spoke of mercury as a toxin that can affect the nervous system and that is most toxic in relationship to the transportation, recycling and disposal of bulbs.

Mr. Pullen then delineated the history of the regulation of mercury bulbs, with mercury first becoming a hazardous waste in 1976. It was not until 1985 that New Mexico began regulation of mercury as a hazardous waste. He added that the NMED's involvement includes the regulation of bulbs in medium- to large-sized businesses, and the Solid Waste Bureau of the NMED oversees its use at solid waste facilities across the state.

He spoke of House Memorial 5 from the 2006 legislative session, which required the NMED and the Department of Health (DOH) to develop a mercury reduction plan. In October of this year, he added, the manufacturing of incandescent bulbs became illegal. Regarding the regulation of mercury bulbs, Mr. Pullen gave details on the mercury concentration that constitutes

hazardous waste and discussed the option that businesses have to manage bulbs as either hazardous waste or universal waste. He also mentioned that the universal waste rule does not apply to businesses that generate 220 pounds or less per month of waste and that households are not subject to either rule.

He then gave details of the mercury reduction plan, stating that in the memorial, the responsibilities of the NMED and the DOH were not made clear. The plan includes strategies on mercury reduction and a study to create an inventory of mercury sources, wastes and emissions; to establish a monitoring program that assesses mercury contamination; and to educate the public. He added that the Solid Waste Bureau of the NMED has funded mercury bulb crushing machines at two solid waste facilities. He also reviewed recycling efforts and percentages and cost variance nationwide for the disposal of mercury bulbs. Apparently, no business in New Mexico is permitted to recycle regulated bulbs, he added. Many distributors have programs to take back mercury bulbs, such as at The Home Depot and Lowe's, and the Solid Waste Bureau and the National Electrical Manufacturers Association have lists of recycling sites on their web sites.

Next, Mr. Pullen reviewed the NMED's best management practices related to mercury bulbs, which include storing them to avoid breakage, closing containers and ensuring that they are structurally sound, labeling, informing employees about the danger of mercury in lamps, training employees to handle these materials and making sure there is documentation to show that the lamps have been properly recycled.

In conclusion, Mr. Pullen spoke about the environmental effects of mercury bulbs, saying that they release one-quarter of the amount of mercury as that of incandescent bulbs, which, although they contain no mercury, indirectly cause high mercury emissions due to their high use of energy, which is often generated from coal-fired plants. He noted that 50% of atmospheric mercury emissions in the United States comes from coal-fired plants.

Committee member questions and ensuing discussion included:

- the NMED's Solid Waste Bureau recommends that landfills not dispose of mercury bulbs and recycle them to an appropriate facility, although there is only a small percent being recycled;
- there is concern over the hazardous release when mercury bulbs are stepped on, as well as subsequent, often ghastly, injuries, and how to properly disseminate information to citizens;
- the NMED has recycling days and sets up booths at county and state fairs to inform citizens and encourage recycling as well as produces brochures on safe management practices; and
- although committee members had several concerns for household safety and regulation and the control of mercury-producing products in general, as well as lead contained in ceramics coming over the border from Mexico, the NMED does not regulate individuals or households, just businesses.

Adjournment

There being no further business, the committee adjourned at 3:05 p.m.

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ENDORSED LEGISLATION

underscored material = new
[bracketed material] = delete

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SENATE BILL

51ST LEGISLATURE - STATE OF NEW MEXICO - FIRST SESSION, 2013

INTRODUCED BY

FOR THE RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE
AND THE SCIENCE, TECHNOLOGY AND TELECOMMUNICATIONS COMMITTEE

AN ACT

RELATING TO UTILITIES; ENACTING A NEW SECTION OF THE PUBLIC
UTILITY ACT TO PROVIDE FOR A PUBLIC UTILITY, INCLUDING A
GENERATION AND TRANSMISSION COOPERATIVE, TO HAVE FIRST RIGHT TO
CONSTRUCT, OWN AND MAINTAIN CERTAIN TRANSMISSION FACILITIES
APPROVED FOR CONSTRUCTION BY A FEDERALLY REGISTERED REGIONAL
TRANSMISSION PLANNING AUTHORITY.

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

SECTION 1. A new section of the Public Utility Act is
enacted to read:

"[NEW MATERIAL] TRANSMISSION RIGHT OF FIRST REFUSAL BY
PUBLIC UTILITY.--

A. An electric transmission line that has been
approved for construction by a federally registered regional
transmission planning authority shall be built by the public

1 utility that the transmission line is interconnecting with if
2 that public utility is willing and able to construct, own and
3 maintain the approved transmission line. If the transmission
4 line has been approved for construction by a federally
5 registered regional transmission planning authority, the public
6 utility, in its sole discretion, may give notice to the
7 commission, in writing, within one hundred twenty days of
8 approval by the federally registered regional transmission
9 planning authority, of its intent to construct, own and
10 maintain the approved transmission line. If no notice is
11 provided within the one-hundred-twenty-day period, the public
12 utility shall surrender its first right to construct, own and
13 maintain the approved transmission line.

14 B. As used in this section:

15 (1) "electric transmission line" means an
16 electric transmission line and associated facilities designed
17 for or capable of operations at a nominal voltage of one
18 hundred fifteen kilovolts or more that will interconnect with
19 transmission lines owned or operated by a public utility; and

20 (2) "public utility" has the meaning defined
21 in Subsection G of Section 62-3-3 NMSA 1978 and, for the
22 purposes of this section, includes a generation and
23 transmission cooperative as defined in Subsection E of Section
24 62-6-4 NMSA 1978."