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

September 21, 2017
University of New Mexico-Los Alamos
Los Alamos

The fourth meeting of the Radioactive and Hazardous Materials Committee (RHMC) was called to order by Senator Jeff Steinborn, chair, on Thursday, September 21, 2017, at 10:09 a.m. at the University of New Mexico-Los Alamos in Los Alamos.

Present
Sen. Jeff Steinborn, Chair
Rep. Carl Trujillo, Vice Chair
Rep. Cathrynn N. Brown
Sen. Carlos R. Cisneros
Sen. Richard C. Martinez
Rep. Larry R. Scott

Absent
Rep. David M. Gallegos
Sen. Ron Griggs
Sen. Gay G. Kernan
Sen. Carroll H. Leavell
Rep. Angelica Rubio
Rep. Debra M. Sariñana

Advisory Members
Sen. Gregory A. Baca
Rep. Stephanie Garcia Richard*
Rep. Jane E. Powdrell-Culbert
Sen. Nancy Rodriguez
Rep. James E. Smith
Rep. Jim R. Trujillo

Sen. William F. Burt
Sen. William H. Payne
Rep. Nick L. Salazar
Sen. Clemente Sanchez

*Representative Garcia Richard was named a voting member for the purpose of this meeting.

Guest Legislator
Rep. Alonzo Baldonado

Minutes Approval
The minutes for this meeting have not been officially approved by the committee.

Staff
Shawna Casebier, Staff Attorney, Legislative Council Service (LCS)
Monica Ewing, Staff Attorney, LCS
Nancy Martinez, Staff, LCS

Guests
The guest list is in the meeting file.

Handouts

Handouts and other written materials are in the meeting file.

Thursday, September 21

Senator Steinborn welcomed members of the committee and the audience to the meeting, and members and attendees introduced themselves.

U.S. Department of Energy (DOE) Update

Doug Hintze, manager, Environmental Management (EM), Los Alamos Field Office, DOE, said that for the past two years, he has served as manager of his office, which was established in 2015 and is responsible for disposition and cleanup of legacy waste. Legacy waste is waste that is the byproduct of nuclear weapons development and research conducted at Los Alamos National Laboratory (LANL) before 1999. EM's cleanup efforts are projected to last through 2035, although the scope of the efforts is continually reassessed, so that date could change.

A 2016 consent order between the Department of Environment (NMED) and EM directs EM's work and divides that work into 17 "campaigns", three of which have been the focus of EM's work over the past two years: 1) chromium interim measure implementation to control chromium plume migration; 2) characterization of a plume of an explosive compound called RDX; and 3) a historical properties completion campaign.

Mr. Hintze recalled an event at the Waste Isolation Pilot Plant (WIPP) in which the structural integrity of storage drums containing remediated nitrate salt was compromised, and he said that 60 similar drums are stored in the area for which EM is responsible. The drums have been refrigerated and are being treated to remove the hazard associated with their initial remediation, and he expects treatment of all 60 drums to be completed by November 2017.

Regarding the implementation of chromium interim measures, Mr. Hintze said that in 2005, a chromium plume was discovered 1,000 feet underground. The plume was caused by a corrosion inhibitor that was released into a canyon. Despite the fact that the inhibitor was last released in 1972, the chromium continues to travel down into the aquifer but has not reached the depth of drinking water sources. EM is drilling wells — at a cost of $2 million to $3 million per well — for use in identifying the boundaries of the plume. EM is balancing its efforts to monitor and stop the plume's spread. The Pueblo of San Ildefonso, the NMED, the DOE and Los Alamos County all monitor the water in the area through sampling.

Regarding the RDX plume, Mr. Hintze said that EM is working to identify the location and size of the plume, which is moving very little, if at all.

LANL's legacy cleanup is currently done under a contract that has expired and will be awarded to another contractor within the month, after which a 90- to 100-day transition between contractors will take place.

Committee members had questions and comments on the following topics.

Legacy waste. The environmental management entity on site at Los Alamos in 1989 identified all the existing waste at that time and defined that waste, created before 1999, as "legacy waste" for tracking and cleanup purposes. EM is responsible only for legacy waste cleanup, and none of that waste is classified.

Drums of waste stored and transported. Two thousand drums are being stored above ground at LANL. Shipment of those drums for permanent storage at WIPP is limited by WIPP's ability to receive shipments, which is reduced due to WIPP's current facility issues. Shipments of waste are packaged based on how the waste will be stored at WIPP. One hundred thirteen drums shipped by LANL to Texas will need remediation, and EM is studying how to do that. Prioritizing shipments of waste for permanent storage at WIPP is done based on safety, and more dangerous waste is shipped first.

Chromium plumes. The Hanford Site in Washington state had a chromium plume similar to the plume in Los Alamos, and the Hanford plume's progression was stopped using sodium dithionite, a method EM is considering for the plume in Los Alamos. The committee voted to send a letter to members of the state's congressional delegation to request that they prioritize funding for remediation of the Los Alamos chromium plume.

Recent safety concerns. In response to a storage drum that burst after shipment from LANL to WIPP, which happened because the drum was packed using organic instead of inorganic kitty litter, LANL identified safety protocols that needed improvement. New quality assurance personnel and procedures were put in place.

Los Alamos Measurement Techniques and Plutonium

Dr. Albert Migliori, laboratory fellow, National Security Education Center, LANL, described a measurement process that he and other scientists developed over more than a decade. The process involves the use of ultrasound measurements, and Dr. Migliori named it resonance ultrasound spectroscopy, or "RUS". A major development in his work came with his group's creation of an aluminum potato, with which the team tested its computation and resonance measurement method. Dr. Migliori was offered the opportunity to use the process to measure plutonium, which he excitedly accepted because testing the substance's compressibility could prove important in the development of nuclear weapons. He learned that it took just a few hours to show changes to the structure of weapons-grade plutonium.

In addition to applications in weapons development, the technique Dr. Migliori helped develop can be used to create "acoustic fingerprints" of various kinds of materials, which can be

used to identify changes or weaknesses in structures and to verify a counterfeit product or material. He noted that the measurement process continues to be refined, and with each generation of RUS hardware created, the process becomes a faster and cheaper measurement method.

Committee members had questions and comments on the following topics.
Technology transfer at LANL. The laboratory has a process used for the transfer of technology developed by its employees, and Dr. Migliori will use that process.

Compression of materials. Compressibility of materials is measured through very controlled and slow compression.

Minutes

The committee approved the minutes from the committee's June 26, July 28 and August 22, 2017 meetings.

LANL Overview

Charles McMillan, director at LANL, described the mission and goals of LANL, which is currently working on issues related to North Korea and investigating issues that will have an impact decades in the future. Approximately 1,000 new employees were recruited by LANL last year, and another 1,000 have been recruited in 2017. Although the operation of LANL will transition to another contractor in 2018, the mission and work of the lab will remain consistent.

Each year, Mr. McMillan provides the President and Congress with an assessment of LANL's stockpile of nuclear weapons, and that communication was sent the previous day. In addition to the country's stockpile, he explained, LANL's global security program includes a focus on nuclear counterproliferation and nuclear nonproliferation.

LANL focuses on four primary pillars in its weapons and global security efforts: 1) materials — designed for specific functions; 2) signatures — development of sensors to analyze information; 3) information science and technology — for processing large amounts of data; and 4) nuclear technology and particles. Regarding safety in operations at LANL, Mr. McMillan said that rates of incidents are carefully monitored. The "total reportable cases", or TRC and "days away from work", or DART rates are reviewed internally and by an external review team. LANL's rates for 2014, 2015 and 2016 have remained below industry standards for the most part.

Mr. McMillan noted that LANL is hiring in all areas of its workforce, and most of its 11,171 employees are full-time employees. He stressed that the education system in New Mexico is critical to an employer like LANL, which is hiring many workers educated in the state's public schools and university systems. He added that LANL is aggressively hiring in part because in the coming five years, approximately one-third of its workers will retire or reach eligibility for retirement.

Committee members had questions and comments on the following topics.

Request for proposals (RFP) process. Questions about the request process and respondents to the RFP should be directed to the DOE.

National security threats. Over the past 75 years the United States' deterrence approach has been successful. North Korea's technology has advanced in recent years with respect to missile capability and nuclear testing.

Competitiveness in computing. China has a faster computer than the United States, and China has made significant investments in research and development and recruiting talent.

LANL hiring. Because the systems of the federal Office of Personnel Management were compromised, it is taking potential employees more than a year to receive a security clearance. More than 1,300 employees are awaiting their clearances.

Safety at LANL. Shipping out of LANL was identified as an area in need of additional safety oversight. Additional areas reviewed for improved safety oversight include management, financial systems, field offices and historical data on accident reports.

LANL Community Involvement and Investment in New Mexico

Kathy Keith, director of LANL's Community Partnership Office, said that her office focuses on three areas: economic development; work with nonprofit organizations and community giving; and education. Because LANL's workforce comes in large part from New Mexico, LANL is invested in being a strong community partner. She highlighted the Los Alamos Employees' Scholarship Fund (LAESF), which enables LANL to invest in economic development by supporting entrepreneurs. LANL's corporate board has awarded more than $35 million to nonprofit organizations since 2006, and employees of LANL contribute more than $3 million each year.

The LAESF was established in 1998, and in its 2017 fund drive, employees raised $400,000, which the lab matched with another $250,000. In addition to scholarships, LANL offers opportunities to high school, undergraduate and graduate students through an internship program. Ms. Keith noted that one scholarship recipient became a mother at the age of 16, graduated in 2011, interned with LANL and eventually received a degree in civil engineering from the University of New Mexico. The LANL internship program worked with 1,639 student interns during the 2015-2016 school year. About one-third of LANL's current employees started as interns at LANL.

LANL is working to develop a science, technology, engineering and mathematics, or STEM, education plan that will help with LANL's workforce needs. LANL has implemented short-term strategies, including partnerships with schools to train radiation control technicians. The most recent education outreach program developed at LANL is a partnership with the

Pojoaque Valley Public School District, and it places professional employees from LANL in district classrooms to assist with teaching math. LANL has also worked in partnership with New Mexico Highlands University on exhibits in the Bradbury Science Museum in Los Alamos. The museum expects an additional 200,000 visits per year attributable to this project.

Committee members had questions and comments on the following topics.

Eligibility for internships. All students are eligible to apply. LANL does not focus its internship recruitment efforts in areas where other similar facilities, such as Intel, focus their efforts.

School partnerships. Participation in the school partnership program is a competitive process by which schools apply to the Public Education Department for consideration. LANL provides employees to assist with teaching in Pojoaque Valley Public School District classrooms five times in a semester and to help train other teachers in the district.

Community Concerns

Andrea Romero, executive director of the Regional Coalition of LANL Communities, said that her organization represents communities with respect to economic development, workforce, materials cleanup, storage and other related issues. The regional coalition has communicated with the National Nuclear Safety Administration about the RFP for the new LANL management contract and has provided input on the draft RFP. The regional coalition also hosted a gathering for all potential bidders on that contract. Ms. Romero noted that the regional coalition would like to ensure that the contractor that will assume management of LANL will not be exempt from the payment of gross receipts taxes.

Gerard Martínez y Valencia, chair of the Northern New Mexico Citizens' Advisory Board, said that the all-volunteer, site-specific advisory board meets every other month and provides input and recommendations to LANL. Mr. Martínez y Valencia explained several issues on which the board is focused, including safety and cleanup issues.

Scott Kovac, operations and research director for Nuclear Watch New Mexico, discussed several issues, including the 2005 and 2016 consent orders related to cleanup at LANL and the chromium plume in Los Alamos. He expressed concerns with the levels of chromium measured in the most recently drilled observation well and with the fact that some radioactive waste located in Area G at LANL is slated to be left in place. He suggested that if waste is to be left in place, the DOE should be required to conduct a 10,000-year performance assessment to determine the long-term effects of the storage of the waste.

Committee members had questions and comments on the following topics.

Tax revenue related to LANL. The state receives significant revenue through taxes paid by the LANL operator, and an exemption for the operator would result in lost revenue. An option could be to require the contractor awarded the operation contract to commit to paying gross receipts

tax. One report showed that in 2006, the state received $41.5 million in gross receipts tax revenue. The state collects income tax revenue on $1 billion in wages paid by LANL.

2016 consent order. Setting deadlines can incentivize completion of cleanup work. Some members are supportive of identifying additional funding sources to help with chromium cleanup. The government may have the option of renegotiating terms related to cleanup deadlines. Community input about consent orders could be useful.

Public Comment

Karen Hadden, executive director of the Sustainable Energy and Economic Development, or SEED, Coalition, expressed concern about the potential impacts of the work of the Eddy-Lea Energy Alliance, LLC. The alliance has proposed in its license application to store 100,000 tons of high-level radioactive waste. A project of that scope could pose risks related to terrorism and transportation of the waste.

Lon Burnham, a former politician in Texas, recalled recent news coverage of the chromium plume and expressed concerns with the toxicity of chromium and its impact on drinking water sources.

Susan Gordon, a representative of the Multicultural Alliance for a Safe Environment, said that it is important that students be trained for jobs related to the cleanup of hazardous waste.

Los Alamos County Councilor Chris Chandler said that the way a business entity chooses to organize itself legally should not be the deciding factor in whether the state receives tax revenue from the entity's operation.

Adjournment

There being no further business before the committee, the RHMC adjourned at 4:02 p.m.