

**MINUTES
of the
THIRD MEETING OF THE 2018 INTERIM
of the
RADIOACTIVE AND HAZARDOUS MATERIALS COMMITTEE**

**August 15, 2018
University of New Mexico-Los Alamos
Wallace Hall, 4000 University Drive
Los Alamos**

The third meeting of the 2018 interim of the Radioactive and Hazardous Materials Committee was called to order by Senator Jeff Steinborn, chair, on August 15, 2018 at 9:22 a.m. at the University of New Mexico-Los Alamos (UNM-LA).

Present

Sen. Jeff Steinborn, Chair
Rep. Carl Trujillo, Vice Chair
Sen. Carlos R. Cisneros
Rep. David M. Gallegos
Sen. Richard C. Martinez
Rep. Angelica Rubio

Absent

Rep. Cathrynn N. Brown
Sen. Ron Griggs
Sen. Gay G. Kernan
Sen. Carroll H. Leavell
Rep. Debra M. Sariñana
Rep. Larry R. Scott

Advisory Members

Sen. Gregory A. Baca
Rep. Kelly K. Fajardo
Sen. Nancy Rodriguez
Rep. Jim R. Trujillo

Sen. William F. Burt
Rep. Stephanie Garcia Richard
Sen. William H. Payne
Rep. Jane E. Powdrell-Culbert
Rep. Nick L. Salazar
Sen. Clemente Sanchez

Staff

Shawna Casebier, Staff Attorney, Legislative Council Service (LCS)
Anthony Montoya, Drafter, LCS

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file.

Wednesday, August 15

Welcome and Introductions

Senator Steinborn welcomed members, staff and guests. He asked the committee members and staff to introduce themselves.

Welcome

Dr. Cynthia J. Rooney, chief executive officer, UNM-LA, thanked the committee for its attendance and welcomed it to the campus.

Los Alamos National Laboratory (LANL) Safety Concerns

The committee welcomed Dr. Craig Leasure, principal associate director for operations and business, LANL. Dr. Leasure provided a brief overview of his time working for LANL and discussed the upcoming Triad National Security, LLC (Triad) management and operating contract transition. He then provided the committee with a breakdown of the physical property on which LANL is located, to reinforce the complexity of managing the laboratory. LANL is located on nearly 40 square miles of land, and there are over nine million square feet of building space, 268 miles of road and a large workforce.

Dr. Leasure assured the committee that LANL has been focused on continuously improving safety and operational effectiveness. He explained that LANL currently employs 210 safety officers and has received the Voluntary Protection Programs, or VPP, Star status rating, the highest possible U.S. Department of Energy (DOE) rating. He also emphasized that LANL has to deal with virtually every hazard imaginable, but current operations allow for the mitigation of risk. Dr. Leasure then provided the committee with statistics related to injury and illness rates at LANL. He explained that currently, LANL is experiencing historically low injury and illness rates. Of the injuries that do occur, he described most as slip, trip or fall injuries.

Dr. Leasure stated that LANL's budget has continued to grow over recent years. He stated that LANL currently employs over 12,000 people in a wide variety of occupations, emphasizing that research and development only account for 2,300 employees. He explained further that 41% of current employees were born in New Mexico and, with LANL's attrition rate being driven by retirements, hiring rates have remained steady. Dr. Leasure then said that LANL makes an effort to use New Mexico-based businesses for procurement. He reiterated the importance of hiring individuals from the area, explaining that the student pipeline is crucial in training and preparing new hires. In 2017, 45% of student employees were native New Mexicans. He stated that training and providing scholarships to local students have fostered and will continue to foster homegrown employee development.

Responding to questions from the committee, Dr. Leasure explained that:

- safety protocols are in place to ensure a safe transition related to the Triad contract;

- the student pipeline for New Mexico residents is important to LANL and it is important to get students involved as early as possible to increase the technical skills necessary to work for LANL;
- the improvement of the safety culture at LANL has been key to the decreases in incident rates. Self-reporting and preemptive identification of safety issues have been crucial to the development of this culture;
- LANL publishes data related to its creation of hazardous waste and allows independent boards to sample the air and water in the area to dispute or confirm LANL's findings;
- LANL procures products from all over the country and the world. It must follow federal competitive procurement rules; however, LANL does actively seek to purchase within the state whenever possible; and
- plans are being developed to ensure that the increase in plutonium-related production is done safely and in a timely manner. LANL will not operate outside of current safety procedures to meet production, but it believes that, with increased funding and employees, production numbers can be met.

Defense Nuclear Facilities Safety Board

Jonathan Plaue, resident inspector, Defense Nuclear Facilities Safety Board (safety board), provided the committee with an overview of the safety board's oversight at LANL. In providing a brief history, Mr. Plaue explained that the safety board was established by Congress in 1988 to provide independent analysis to the DOE to facilitate the department in providing adequate health and safety protections at nuclear defense facilities. The safety board is made up of five presidentially appointed individuals who provide this analysis and advice to the secretary of energy. Relating to LANL, the safety board provides oversight of the plutonium facilities. Mr. Plaue stated that the safety board reviews the design, construction and maintenance of the facility. He explained that these reviews are done in a public manner and the safety board can obtain permission from the DOE to conduct public hearings if necessary.

Mr. Plaue then walked the committee through multiple letters that the safety board has drafted and sent to the DOE in the last year and the substance of two public hearings held in Santa Fe in the last two years. Mr. Plaue concluded his presentation by discussing the safety board's current areas of focus at LANL, including: (1) the seismic performance of the plutonium facility; (2) the nuclear criticality safety program; (3) the conduct of operations in the plutonium facility; and (4) the safety basis for resuming transuranic waste operations.

Responding to questions from the committee, Mr. Plaue clarified some of the duties and responsibilities of the safety board. He stated that facility security is outside of the scope of the safety board, that the safety board has never been denied access to a site and that the safety board's primary focus is nuclear safety, which can range from seismic activity to worker safety. Mr. Plaue clarified that while the safety board is appointed by the president, the members are statutorily required to be recognized experts in fields related to nuclear safety. Further questions were raised as to the recent DOE order limiting information that nuclear facilities can provide to

the safety board. Mr. Plaue said that the National Nuclear Security Administration (NNSA) has not yet put the order into the contract governing LANL, that the safety board is working on assessing the effect the order will have on its oversight responsibilities and that public meetings will be held to gain public input on the order.

Production Expectations Versus Site Realities and Worker Safety at LANL

Greg Mello, executive director, Los Alamos Study Group, began his presentation by providing the committee with his analysis of production expectations and site realities for the expansion of plutonium warhead core production. Mr. Mello stated that he believes that the proposal to produce more plutonium warhead cores would not be feasible without production becoming unsafe. Mr. Mello then provided the committee with an overview of the layout of LANL. He stated that, in the past, LANL's mission included low-cost operations and only held a moderate level of risk. However, in 2015, an increase in industrial production of warhead cores was codified in law through the National Defense Authorization Act (NDAA). Mr. Mello contested the value gained by the increase in production, which would raise the cost and the risk of operations at LANL. In support of his points, Mr. Mello discussed a 2017 study by the NNSA that characterized LANL's production capacity as far below the projected production goals. Mr. Mello stated that the NDAA mandate requires LANL to implement surge efforts that exceed LANL's production capacity and requires the NNSA to use multiple labor shifts until underground modular storage is completed.

Mr. Mello explained that there are several factors as to why increased industrial production of the warhead cores at LANL is unfeasible. Mr. Mello concluded by stating that the site's isolation significantly increases costs and safety concerns, the topography of the area significantly limits construction capabilities and LANL has historically held a culture of research and development as opposed to being a high-hazard industrial facility.

Responding to questions from the committee about the Los Alamos Study Group, Mr. Mello explained that it is a nonprofit think tank that emphasizes and lobbies for disarmament and worker safety nationwide. Questions were raised regarding production plans across the country, safety and the safety board's role. Mr. Mello stated that there are no other sites in the nation currently planning a production increase on the scale of LANL. He clarified that, at this time, he does not believe the pressure to increase production is compromising safety, but he does believe that this will occur in the future. He also stated that he believes that the safety board has played a vital role in advancing safety; however, because the safety board has no regulatory power, it is a compromise to true regulation, which Mr. Mello believes would be preferable.

Thermohydraulic Research and Development for Dry Storage Casks at Sandia National Laboratories (SNL)

The committee welcomed Dr. Evaristo J. Bonano, senior manager, Advanced Nuclear Energy Programs Group, SNL. Dr. Bonano began by explaining a simplified nuclear fuel cycle process, ending with the removal of the fuel rod. He then explained the construction of a fuel rod, stating that uranium pellets within the fuel rod are the material to be stored in dry cask

storage. Dr. Bonano explained that, in 2006, the country started to reach its spent nuclear fuel capacity. In response, in 2008, the Yucca Mountain storage facility application was submitted. Currently, the country still stores the majority of spent nuclear fuel in pool storage; however, Dr. Bonano stated that this trend is changing and that all spent fuel will be stored in dry storage eventually.

Dr. Bonano then discussed current testing done by SNL related to dry cask storage and the transportation of those casks. The testing includes vertical facility testing using simulated canisters and fuel rods. This testing is ongoing and, Dr. Bonano explained, in order to have confidence in the current predictive models, more research must be conducted for both vertical and horizontal storage configurations.

The committee raised numerous questions related to safety and the integrity of the canisters during transport. Dr. Bonano explained that:

- the canisters are completely sealed and multilayered, so air never comes into contact with radioactive material;
- the possibility of a leak is highly unlikely. Some casks have been around for decades and there is no data showing cracking or leaking of these containers;
- there are no ongoing or new chemical reactions occurring once the fuel rods have been removed and stored;
- the environment, topography and weather of an area is taken into account during testing for the storage of the canisters;
- fuel rods have been transported across the country for over 60 years; and
- under the continuous storage rule, canisters will be repackaged every 100 years.

Dr. Bonano clarified that projections are never without uncertainty, but due to his testing, he is confident in the integrity and safety of dry cask storage. He stated that, recently, a 14,000-mile experimental trip was undertaken to study the transport of the casks. He is hoping that the extensive report on the results of the transport study will be made available soon.

Chromium Plume Cleanup Update

Dane Andersen, environmental scientist and specialist, Department of Environment (NMED), discussed the background of the chromium plume cleanup effort. He explained that the site is located between Los Alamos and the Pueblo of San Ildefonso. The chromium plume is currently 1.7 miles long and .7 miles wide and is located nearly 1,000 feet below the ground. Mr. Andersen stated that the chromium plume has held the highest priority at the NMED over the past year. He explained that the NMED's latest evaluation report recommended extraction of the chromium due to LANL's ground water model. To prevent migration of the plume, the NMED has approved the conversion of the current chromium, Cr(VI), into Cr(III). He stated that the Cr(III) chromium is much less mobile and less toxic and, due to the water flow in the area, the Cr(VI) form of chromium could theoretically enter the geological water flow and spread.

Mr. Andersen discussed the current monitoring of well locations and the location for the injection site to convert the chromium. A new well will be drilled within the year to perform further testing to determine the success of the conversion and whether the plume has migrated. He then discussed the process of conversion, stating that amendments will be injected into the aquifer that will cause a chemical reaction converting Cr(VI) into Cr(III). There are two primary amendments being tested, sodium dithionite and molasses. He stated that long-term viability of the amendments is still being evaluated.

Douglas Hintze, manager, Environmental Management, Los Alamos Field Office, DOE, briefly explained that the DOE has worked closely with the NMED and the Pueblo of San Ildefonso to ensure that the chromium cleanup is efficiently and quickly completed. He explained that pushing contamination to the north, which could be caused by injection of amendments, is a scenario that the entities want to avoid. He stated that extraction from the northern wells could prevent the plume from moving further north and is the desired course of action at this time.

Governor Perry Martinez, Pueblo of San Ildefonso, provided brief comments that the NMED and the DOE have been in constant contact and that the pueblo is aware of the issues and potential risks. He stated that the pueblo is seeking a monitoring well to be drilled on tribal land to ensure that the plume has not migrated toward its water supply. However, the pueblo has been unable to obtain a monitoring well at this time.

Members of the committee raised questions relating to the funding of the cleanup and the growth of the plume. Mr. Hintze stated that funding for the cleanup comes from the \$200 million provided to LANL for waste cleanup. He stated that this cleanup is currently the top priority. Mr. Andersen stated that the plume has not grown over the last year; rather, new exploration wells have been drilled and new data regarding the plume's location have been gathered.

NMED Compliance Order on Consent with LANL Update

Jennifer Hower, general counsel, NMED, and Mr. Hintze provided the committee with an update on the NMED's compliance order on consent with LANL. Ms. Hower explained that the consent order was signed in 2016 and provides for the enforcement of corrective action for the release of hazardous waste or materials at LANL. She stated that corrective action is organized using risk-based analysis and that every year the DOE identifies and the NMED approves the list of milestones for the year. These milestones are tentative targets based on the necessity of the project for that year. Ms. Hower stated that milestones are enforceable and failure to meet the deadlines can result in penalties. However, there is flexibility to allow for updating of the plan so that, as new information is gained, deadlines can be shifted appropriately. Ms. Hower discussed briefly some current milestones, including the chromium cleanup projects. She stated that the current estimated completion date for the consent order is 2036, but as new items are added and existing projects are updated, this date will change.

Mr. Hintze briefly reiterated that the DOE and the NMED work closely on ensuring that the consent order is up to date as new information is gained. He used an example from the chromium plume cleanup regarding issues with a well that required the drilling of an entirely new well. He explained that these types of unforeseen issues can cause a delay in meeting milestones, but the NMED and the DOE ensure that the milestones are updated appropriately.

Responding to a question from members of the committee, Ms. Hower stated that the plan is updated annually. She stated that the proposed changes are created through close collaboration between the DOE and the NMED and that every project is updated annually to provide anticipated end dates.

Public Comment

Scott Kovac of Nuclear Watch New Mexico thanked the committee for holding a discussion on the operations of the Defense Nuclear Facilities Safety Board and stated that reclassification of the hazard level at certain buildings at LANL will remove operations in those buildings from the oversight of the safety board. Noting that plutonium pit production is capped at 20 pits per year per the federal National Environmental Policy Act of 1969 and that LANL only made 11 pits in 2012, he questioned if plutonium pit production was of great importance and why LANL had not produced a pit since 2013. As to the consolidated interim storage facility planned for Eddy and Lea counties, he raised the concern that, though touted as a regional economic development project, the project represents a huge corporation making a profit, while few jobs are actually created.

Joni Arends, co-founder and director of Concerned Citizens for Nuclear Safety, raised three issues with the committee. First, she urged protection of the waters surrounding Los Alamos, noting that three times the amount of waste that will be stored at the Waste Isolation Pilot Plant was buried without appropriate liners at Los Alamos after the Cold War and that these dump sites remain unremediated and pose an ongoing threat to the regional water systems. Second, she raised a concern that the new compliance order on consent has fewer possibilities for public input on the remediation plans than the old order and averred that certification of remediation goals and discrepancies in documents should be open to public hearing. Third, she underscored the necessity of public access to historic documents about the operations of LANL, noting that Building D, where the Los Alamos Inn currently stands, had emissions during the 1950s that were greater than the plutonium from the Hanford, Rocky Flats and Savannah River sites combined.

Beata Tsosie of Tewa Women United spoke of the need to honor the ancestral energies of the land in and around Los Alamos and raised concerns about the rights of indigenous people to have access to the sacred sites occupied by LANL. She urged a change of perspective from continuing with toxic releases into the environment, necessitating billions of dollars for cleanup, to honoring life and water. She raised concerns that the standards for the cleanup efforts do not take into consideration those who have a land-based existence in the region and are thus the most

vulnerable to the effects of the contamination. She urged a shift from the weapons and war economy to a focus on taking care of people who live there.

Adjournment

There being no further business before the committee, the committee adjourned at 4:22 p.m.