

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

**October 13, 2011
Pecos River Village Conference Center
Carlsbad**

The fourth meeting of the Radioactive and Hazardous Materials Committee (RHMC) was called to order at 10:04 a.m. by Representative Antonio Lujan, chair, on Thursday, October 13, at the Pecos River Village Conference Center in Carlsbad.

Present

Rep. Antonio Lujan, Chair
Rep. Thomas A. Anderson
Rep. Cathrynn N. Brown
Sen. Carroll H. Leavell
Sen. John Pinto
Rep. Jim R. Trujillo
Rep. Shirley A. Tyler

Advisory Members

Rep. Eliseo Lee Alcon
Rep. Donald E. Bratton
Rep. Jim W. Hall

Staff

Gordon Meeks
Renée Gregorio
Cassandra Jones

Guests

The guest list is in the meeting file.

Handouts

Handouts and other written testimony are in the meeting file and/or posted on the web site.

Thursday, October 13

Absent

Sen. Richard C. Martinez, Vice Chair
Sen. Vernon D. Asbill
Rep. Brian F. Egolf, Jr.
Sen. Stephen H. Fischmann
Sen. David Ulibarri

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

Representative Lujan announced that Secretary of Environment F. David Martin could not be in attendance because his wife was in a car accident that morning. The secretary has agreed to be present at the RHMC's November meeting to answer any policy or technical questions at that time. Representative Lujan then turned the chairing of the meeting over to Representative Brown. She welcomed all to Carlsbad, and then she asked committee members to introduce themselves.

Greater Than Class C Radioactive Waste at the Waste Isolation Pilot Plant (WIPP)

Tom Kesterson, Department of Environment, took Secretary Martin's place and read the secretary's prepared statements to the committee on the disposal of greater than class C (GTCC) and "GTCC-like" waste that is currently being evaluated by the federal Department of Energy (DOE). The question of how this waste should be permanently disposed of is being considered, with WIPP being one of the suggested sites.

Although the Nuclear Regulatory Commission (NRC) rules say that GTCC waste needs to be disposed of with greater confinement than many disposal facilities offer, GTCC waste managed by the DOE is not defense-related waste, Mr. Kesterson said. Since WIPP is authorized for the disposal of only defense-related transuranic (TRU) waste, the GTCC waste is not eligible for disposal at WIPP, he explained.

He outlined the operations at WIPP, including regulations put in place by the Department of Environment, and stated that more than 10,000 shipments have been safely received at the WIPP facility. He also read the document on WIPP storage data, which concluded that WIPP is capable of permanently isolating the lower radioactivity GTCC waste from a storage volume and radioactivity level.

Questions and comments by committee members included:

- what will the nation do to store this waste once WIPP reaches capacity?; and
- what is the DOE's prediction for what happens in 10 or 20 years?

WIPP Update

Ed Ziemianski, interim manager, DOE Carlsbad Field Office, and Farok Sharif, president and general manager, URS Washington TRU Solutions, gave the committee a WIPP status update handout and summarized its contents. Mr. Ziemianski reviewed the WIPP team, whose biggest partner is Washington TRU Solutions. He said that the WIPP work force is diverse, which is fairly typical for its employee classification. It is also part of the mining industry, which has been around a lot longer than the nuclear industry. According to Mr. Ziemianski, Mr. Sharif helps to get these diverse cultures to blend. Mr. Ziemianski said that WIPP has a significant impact on the economics of southeast New Mexico, with a fiscal year 2011 budget of \$220 million, which is spent inside and outside of the state.

WIPP is the country's only deep geologic repository for the permanent disposal of TRU waste, which is radioactive waste left over from research and production of nuclear weapons, he

testified. This waste is contaminated with isotopes with an atomic number greater than 92. The two kinds of waste are contact-handled and remote-handled. The former represents about 96 percent of the waste to be disposed at WIPP and does not require any shielding other than its container. Remote-handled waste is handled in certified casks. About four percent of the waste to be disposed of at WIPP is this kind.

WIPP's location was decided upon largely because of salt. The environment has a stable geology and lack of water, and the plastic quality of salt allows for it to close in on the waste. The panels where waste is stored were described by Mr. Ziemianski, which included those that are currently filled as well as those that are currently unfilled. He added that the transportation system at WIPP is very safe, and drivers are held to the highest standards.

Committee members asked, if WIPP runs out of space, which way would the facility go to expand and what is needed to do so? How is the site defined?

The answer was that panels 9 and 10 would be in the southern direction, but the WIPP facility is on 16 square miles and this is dead center. There is plenty of room to go in any direction and WIPP has not run out of room, Mr. Ziemianski said. Congress has established limits for the volume of waste that can be disposed and limits for the amount of activity for remote-handled waste.

Mr. Ziemianski said that the drivers have the discretion to decide on safety issues in transporting waste. Bill Mackie, institutional affairs manager, WIPP, added that WIPP drivers abide by National Weather Service watches and warnings and get off the road as needed.

Of the shipping containers, the TRUPACT-II is WIPP's real workhorse, he said.

Committee questions and comments included:

- configuration of the TRUPACT-II;
- vehicle capability to immobilize itself in place;
- can terrorists use waste transport to their advantage? (All vehicles have transponders on them that are connected by satellite to the monitoring areas. The central monitoring room is where the movement of waste is tracked, which can be viewed at four- or five-minute intervals. Notification can happen immediately to state and tribal entities if there is an accident. A user name and password is needed to get on to the system. Packages are all double contained. Even if a terrorist could get access to a package, the terrorist likely could not open it. There are also bolts everywhere. Waste transport does not carry nuclear weapons; rather, it transports clothing, tools and equipment tainted with nuclear contamination. A terrorist could not make "dirty bombs" with these materials. People should probably be more concerned with propane and gasoline trucks going through Santa Fe.);
- "we were taught to fear anything nuclear. Some of this fear is a vestige of those days"; and
- the major concern is public perceptions and public fear.

Mr. Ziemianski indicated that there have been more than 30,000 first responders trained since 1988. Also regarding safety, he said that the WIPP site has been part of the "Star" safety program, a voluntary protection program, since 1994. WIPP has received more than 10,000 shipments to date, he added, with some impacts on shipment such as weather and wildfires.

He reviewed the volume of waste disposed of at WIPP as over 78,000 cubic meters to date. The facility is 25 years old and it needs to stay in operation for another 25 years, he added. The Department of Environment's goal is to complete the disposition of 90 percent of legacy TRU by 2015, he said. In looking ahead, Mr. Ziemianski said that there are budget challenges and the cleanup of Sandia National Laboratories is also a future project. He added that WIPP would like to have strong input on determining the nuclear future of this country and that maintaining community support is key.

Questions and comments from the committee included the following:

- GTCC waste has two different sets of regulations, but under the federal Energy Policy Act of 2005, the NRC was given regulatory responsibility for commercial waste. GTCC waste is DOE-owned and regulated. Physical characteristics of the two kinds of materials are almost identical. NRC/DOE rules are what differs, not the plutonium. The term was created to reinforce the similarity of this kind of waste;
- what legislation would have to be put in place to expand the purpose of WIPP;
- the Blue Ribbon Commission on America's Nuclear Future is interested in looking at WIPP as a solution for large volumes of commercial waste, and there is a lot of support for this in southeast New Mexico;
- there are plans for the chemistry and metallurgy research replacement building in Los Alamos to have a 50-year life expectancy compared to the WIPP scheduled closure in 2030;
- the amount of money that has been invested in this project over its life; and
- there are more than 1,000 employees at WIPP.

Mr. Mackie gave the committee a handout and spoke on the routing update. He said transportation system safety is the main goal. WIPP has two transportation contractors with 60 total drivers. The Transcom system is a defense system that meets all necessary requirements. All trucks have three different systems in place to track trucks at all times. He indicated that there have been a lot of public meetings on the routing around the brine well in Carlsbad that is feared may become a sinkhole. He showed the alternate Texas route in his handout that comes out of Big Spring, Texas, to the state line at Eunice. This request was submitted to the State of Texas, public hearings have been held and Texas is currently preparing a letter to recommend that there be a WIPP route change. This will save approximately 90 miles one way. Mr. Mackie said that all necessary letters and approvals should be in place by the end of this year. WIPP has also requested from the State of New Mexico approval of route changes. Some of the route changes need to be made so that the north access road can be reconstructed, he said.

On the New Mexico side of things, WIPP met with Secretary of Transportation Alvin C. Dominguez to request route changes in August, he said. WIPP was recently told that the Department of Transportation (DOT) would not take action because of congressional issues around an unresolved issue with the funds appropriated through Congress. Mr. Mackie indicated that WIPP is in limbo now regarding these decisions. Once the funding problem is solved with DOE headquarters and Congress, the route changes will still take six months to nine months to get through the approval process.

Questions and comments from committee members included:

- a truck hit by a train;
- verbal approval to use NM 31 to 128, but that approval ends this year;
- did the DOT indicate why it would take so long?;
- the state loss of federal funding this year; and
- the committee approval (by motion) of a request that the DOT be invited to the next meeting (November 16), which passed unanimously.

Mr. Mackie told the committee that in the afternoon, three trucks will be on hand with three different packages on them. Two inspectors will demonstrate a level 6 inspection on the TRUPACT-III. Before vehicles can move, they must be defect free.

The committee approved the minutes from the August 15 meeting.

Carlsbad Environmental Monitoring and Research Center

George Mulholland, interim director of the Carlsbad Environmental Monitoring and Research Center (CEMRC), New Mexico State University, who said he came out of retirement to take his interim position, announced that Russell Hardy will assume the directorship in January 2012. He lauded Mr. Hardy as a good listener and as someone totally prepared to do an excellent job in his new position. He requested that the committee include the CEMRC on its agenda next year and offered the idea of doing a tour there.

He said that the CEMRC is a world-class facility in environmental monitoring. The organization provides objective environmental monitoring, conducts research, provides training, develops measurement methods and establishes a health environmental database, Mr. Hardy's handout explained. Mr. Mulholland praised the DOE for its advocacy of measuring methods established at the CEMRC. The organization also has a solid reputation worldwide, he added. The research effort, although not as strong in the past few years, is being beefed up in biology research, evaluating cell growth in environments with less radiation in its background. The CEMRC is also conducting chemistry research by measuring volatile organic compounds from WIPP, which he said is very safe. One of the questions the CEMRC is addressing is how background radiation affects vegetation. The question of anything being released from the WIPP site was assessed, and the CEMRC concluded that there has been nothing emitted from the WIPP site. He said that if anyone wants a copy of the CEMRC's annual report, it will be provided.

The CEMRC is an expensive venture, and it needs finances for equipment and for hiring

additional staff.

Questions and comments from committee members included that the CEMRC took data on background radioactivity before any waste was introduced.

Carlsbad Brine Well Update

Jami Bailey, director, Oil Conservation Division (OCD), Energy, Minerals and Natural Resources Department (EMNRD), and Jim Griswold, senior hydrologist, EMNRD, presented next on the Carlsbad brine well. Mr. Griswold manages the class 3 brine wells, he said. His PowerPoint presentation showed a map of New Mexico and West Texas reserves of oil and gas. Overlying these reserves are significant areas of salt, which provides value to the potash industry, he explained. As one moves west to east, the salt gets thicker and deeper, as deep as 2,000 feet in the Hobbs area. Brine is used to mitigate drawdown pressures, he explained. Brine wells are solution mining operations that dissolve salt to make brine (salt-saturated water). He showed brine well configurations that include single or two-well operations. There are 32 historically permitted brine wells in New Mexico. He provided a map showing their locations. Active and inactive facilities were shown, as well as collapsed wells. He explained that the Jal sinkhole was associated with water flooding. There is only the Mesquite operation in Otis that has a yellow dot.

He said that brine operations were historically owned by trucking companies. Statewide brine production for the last one and one-half years is increasing. Enforcement mechanisms protect brine water. Factors affecting stability are: the depth to the top of salt; the width of caverns; the strength of roof material; and the percentage of liquid in caverns.

On July 16, 2008, the OCD got a call from a brine operator, Jim's Water Service, asking what it would take to get a new brine well permit. It is a relatively straightforward process, Mr. Griswold said. The operator indicated that it had lost a well, i.e., a brine well had collapsed. Fresh water for brine-making was coming into the collapsed cavern. Within minutes, a sinkhole opened up like an earthquake. The sinkhole grew to a diameter of 400 feet within months, and numerous concentric fractures appeared around the sinkhole itself. The site is on state trust land; otherwise, it is used only for grazing. The site is being monitored regularly. What precipitated the collapse is still not known, but the hope is that this was an isolated event.

There was another event at Loco Hills. This facility produced at least eight million barrels of brine. In November 2008, an operator thought he saw a dust devil, but he realized soon that it was a collapse. On November 14, a moratorium was placed on new brine well permits. The OCD sought help from experts across the state to determine what was going on. In this case, the road west of the facility showed a lot of cracking, as in the previous sinkhole. A slab of concrete at the facility also cracked. The sinkhole was backfilled, which took over a million cubic yards to fill. There was another collapse in Denver City, Texas, within a year of the earlier collapses in New Mexico.

The best current hypothesis about how caverns look below the surface is that a morning-

glory-shaped cavern develops that is laterally extensive. When the cavern fails, there is a central sinkhole and then fracturing around it, Mr. Griswold said.

The OCD became very concerned with operations in Carlsbad. There are shallow salt beds, lots of brine production and a good-sized cavern in Carlsbad. The well in Carlsbad was plugged. The locale includes the Carlsbad Irrigation District canal, a church, a feedstore, a truck stop, a trailer park and convenience stores. The OCD held a meeting in March 2009 to talk about brine wells in general, and many people in attendance were from Carlsbad. Recommendations made to the OCD then, from a public safety point of view, demanded that something be done. Action was taken to remove trucks and personnel from the facility, and the OCD began monitoring the situation. This monitoring has included surface subsidence measurements, tilt plate measurements and establishment of an early warning system. He said that data from borehole tiltmeters show continual movement. In August 2009, a survey was completed showing where salt has been removed. During the budget crisis, the OCD's funding was swept into the general fund. Since then, the City of Carlsbad stepped up to maintain the early warning and monitoring systems.

In December 2009, the owners of a feedstore filed suit for loss of property. The City of Carlsbad filed suit to pay for monitoring. In March 2010, Governor Richardson signed legislation to increase revenues from oil and gas to be used on efforts such as this. The brine well was reentered to do sonar logging of its interior. Mr. Griswold showed the results of sonar logging on a graph. Cavern pressure monitoring shows continuous incline and that the cavern is not stable. The OCD hired the Cave and Karst Institute to look into this. He showed a graphic representation of an area shaded in red (full of brine) and an orange area, indicating fractured overburden, possibly, where water can come up.

Questions and comments from committee members included:

- an increase on the oil and gas severance tax;
- additional wording in that statute to keep that funding separate for this purpose;
- the status of the initial operator (bankrupt);
- the estimated cost of trying to deal with this problem (the OCD spent \$750,000; the City of Carlsbad spent \$1.7 million);
- who decided to plug the well initially;
- the need for statewide perspective on this;
- examples to learn from in other parts of the world;
- has the legal process run its course?;
- new permit applications for new brine wells in the state;
- bonding for any company desiring a permit for brine wells and new methodology for water and casing chutes; and
- water tables falling in the Ogallala Aquifer.

Comments and Questions from the Audience

An audience participant asked if the brine well collapses, could mitigation funds be used to stock it with bass?

National Enrichment Facility Status

Gregory Smith, chief executive officer, Louisiana Energy Services (LES), and Brenda Brooks, director of community affairs, LES, gave an overview of Urenco's vision and mission, a company dedicated and devoted to nuclear energy as a great means of making electricity. He said the company takes safety very seriously, and its record proves this with all its awards received for safety performance. He said that the company indoctrinates everyone who comes onto its site. He reviewed the corporation's number of employees, construction staff, facility worth and payroll. Much has been expanded and improved over the past several years, he added.

Construction updates include improvements to electrical distribution and the addition of several new facilities. A building was named for former Senator Pete Domenici because he is the reason Urenco came to New Mexico, Mr. Smith said. Phase 2 construction has begun as well, with the first centrifuge planned to go online in June of next year. Phase 3 construction will begin in the design stage next year, after board approval, he added.

The plant will be brought online after the NRC establishes monitoring and inspection. Over a 32-week time period, the plant was reviewed for qualifications and safety, he said. The plant has produced 103 tons of material, which consists of 14 cylinders of product. It will double this capacity by the year's end. Mr. Smith explained some of the technical aspects of the process and the uranium product stream.

Mr. Smith said that his company considers it a privilege to operate in Eunice and the company is committed to ensuring that the community feels comfortable and safe.

Questions and comments from committee members included:

- tax revenues from the business;
- International Isotopes coming to southeast New Mexico because of Urenco;
- Isotopes will have 100 employees, Urenco has 368 employees and there are 1,000 construction workers;
- the Isotopes plant taking the waste generated from Urenco;
- accountability;
- the owner of materials;
- if bankruptcy occurs, who would clean up the mess and how much would it cost? (decommissioning fund);
- any use for a waste repository such as WIPP;
- validation of the product and material;
- the price of uranium;
- fuel rod production in Washington State;
- concerns over nuclear energy waste;
- the need for a national energy policy; and
- reprocessing feed stock from within or from foreign countries.

TRUPACT-III Exhibit and Simulated Inspection

The meeting adjourned at 4:30 p.m., and most members went to the parking lot to see the

transportation equipment and to watch a simulated inspection.

- 9 -