MINUTES OF THE REGULAR MEETING OF THE
ROCKY MOUNTAIN LOW-LEVEL RADIOACTIVE WASTE BOARD

COURTYARD MARRIOTT
6901 Tower Road
Denver, Colorado 80249

June 18, 2009

ATTENDANTS

Board Members:

Ron Curry, New Mexico, Chair
Gary Baughman, Colorado
Leo Drozdoff, Nevada *(via telephone)*

Barbara Green, Legal Counsel
Leonard Slosky, Executive Director
Sheri Reynolds, Recording Secretary

Others:

Steve Laflin, International Isotopes, Inc.
John Miller, International Isotopes, Inc.
Jennifer Opila, Colorado Dept. of Public Health & Environment
Clint Williamson, National Enrichment Facility
Stephen Cowne, National Enrichment Facility
Craig Tessmer, Adams County
Judy Woodson, U.S. Army, Department of Defense
Adrian Howe, Nevada State Health Division
Phillip Peterson, National Jewish Health
Jim Lieberman, Array Biopharma
Michelle Law, University of Colorado
Solomon Malick, American Ecology
Rick DiSalvo, Particle Measuring, Inc.
James Davenport, Particle Measuring, Inc.

REGULAR MEETING

Mr. Curry, Chair, called the meeting to order at 1:02 p.m.

The first item on the agenda was the approval of the minutes of the October 28, 2009 Regular Meeting and Notice of Actions Taken during the January 5, 2009, January 30, 2009, February 23, 2009, March 11, 2009, and April 2, 2009 Telephonic Meetings. Mr. Baughman moved to approve the minutes as submitted. Mr. Curry seconded; the motion carried.

Mr. Slosky briefly explained the history of the Rocky Mountain Compact for the benefit of new attendees. As explained, the compacts were formed in the early 1980s in response to a national crisis that developed where three sited states were no longer willing to shoulder the burden of waste disposal in the U.S. This led to the 1980 Policy Act, the 1985 Policy Act, and the Compacts which were enacted by Congress. Compacts are agreements between states and are federal law. The Compacts are unusual since they exercise authority over interstate commerce which is normally reserved for the federal government. The principal authorities of the Rocky Mountain Compact are to regulate the import, export, and disposal of low-level radioactive waste within the member states of Colorado, New Mexico, and Nevada. The Board has established rules that govern each of these areas. In-region generators must obtain an export permit from the Board to send waste outside of the compact. We have a regional disposal facility operating in Colorado. Out-of-region generators desiring to bring waste into the region must obtain an import approval from the Board.

Mr. Curry added that the Board members are appointed by the respective state governor. Mr. Curry is serving his sixth year on the Board. Mr. Baughman is serving his third year. Mr. Drozdoff is serving his second year.

BRIEFING BY NATIONAL ENRICHMENT FACILITY

Mr. Cowne of Louisiana Energy Services, L.P. (LES) was invited to speak on anticipated waste generation at the National Enrichment Facility in Eunice, New Mexico. Mr. Cowne provided a construction update on the facility. Currently over 400 centrifuges have been assembled and are being tested thoroughly. They currently have 292 employees and anticipate 320 by the end of 2009. With ongoing construction activity, there are approximately 1,000 workers on-site of which ¾ are construction contractors. Their annual payroll is expected to be about $30 million in 2009. Mr. Cowne added that an expansion team was recently created to increase plant capacity from 3.3 million (M) Separative Work Units (SWU) to 5.9M.

Natural uranium (U) must go through a conversion process to remove impurities and is combined with fluorine to create uranium hexafluoride (UF_6). UF_6 gas is cooled to a liquid and drained into 14-ton cylinders where it solidifies after further cooling. These 14-ton cylinders are feed material for enrichment since UF_6 is the only U compound that exists as a gas at a suitable temperature. Mr. Cowne explained that there is one conversion facility in the U.S. operated by Honeywell International located in Metropolis, Illinois.

Currently, there is one operating enrichment plant in the U.S. located in Paducah, Kentucky managed by the United States Enrichment Corporation (USEC). Enrichment is a critical step in creating nuclear fuel. During enrichment, the concentration of U^{235} is increased and U^{238} is decreased. The USEC facility uses first-generation gases diffusion technology while LES will utilize next-generation gas centrifuge separation technology. LES will collect and cool the enriched gas in 2.5 ton cylinders which will then be shipped to fuel fabricators around the

country. While the Nuclear Regulatory Commission (NRC) continues to inspect and verify readiness for operations, the first cascade prepares to become operational later this year or early next year.

Mr. Cowne discussed the anticipated low-level radioactive waste streams generated at the facility. The low-level radioactive waste will include liquid, solid, and mixed waste. In an effort to reduce the anticipated liquid waste, LES will provide disposable clothing which will reduce liquid wastes by 25-30% eliminating the need to wash clothing. As a result, solid wastes will increase. The highest contributor of solid wastes will be ventilation filters. Once the facility is operating at 3M SWU (in 2013), the total projected wastes in pounds are estimated to be 192,000 per year. Of that, approximately 140,000 will be ventilation filters.

LES expects to produce approximately three (3) cylinders of DUF_6 tails in 2009; 159 cylinders in 2010; 349 cylinders in 2011; and 597 cylinders in 2012 (based on .35% tails assay and 4.4% product assay). The higher the tails assay the more tail cylinders will be generated. LES has a regulatory obligation to ensure that the material is properly disposed of. Mr. Cowne added that DUF_6 will be treated as an asset until de-conversion to uranium oxide. Of great concern is determining the best method of extracting fluorine from DUF_6 tails since the compound reacts with water or ethanol to create toxic fumes of hydrofluoric acid. He explained that under current market conditions, re-enrichment of tails is a commercially viable option in creating uranium and reducing the overall number of tails cylinders for de-conversion and disposal. One disposal option is to partner with a de-conversion facility in the U.S. which would result in low-level radioactive waste. Another feasible option is to ship DUF_6 tails to a Tails Management Facility (de-conversion plant currently under construction) owned and operated by URENCO (LES' parent company) in England, UK.

After completion of the presentation, Mr. Slosky commented that this is the third presentation from LES because they will be the largest low-level waste generator (of operational waste) within our compact. There will be continued interaction between LES and the Board since there is not a facility within our compact that can dispose of the operational waste or the DUF_6 tails. He added that the NRC has done a review and confirmed that the DUF_6 tails are considered Class A low-level waste and source material not NORM due to the uranium content.

BRIEFING BY INTERNATIONAL ISOTOPES

Mr. Laflin of International Isotopes, Inc. (INIS) was invited to speak on a proposed depleted uranium de-conversion facility in New Mexico. INIS plans to build on a 640-acres site just west of Hobbs, New Mexico for the nation's first commercial facility for de-conversion of DUF_6 and fluorine extraction. They "de-convert" DUF_6 to DUF_4 using best available technology then utilize a patented Fluorine Extraction Process (FEP) to extract high-value specialty gases and convert U tails to a stable chemical form for safe storage or disposal.

He added that INIS was established as a public company in 1995 and has been operating in Idaho since 2001. They currently manufacture a full range of nuclear medicine calibration and reference standards, high purity fluoride gases, and a variety of cobalt-60 products used in medical and industrial applications including cancer radiation treatment and container security examinations. INIS also distributes Iodine-131 to pharmacies all over the U.S. which is used primarily as treatment for a host of thyroid conditions. INIS has held a NRC headquarters license since 2005 and has been operating a demonstration-scale FEP facility in Idaho since 2006.

Mr. Laflin explained that the business opportunity is primarily based on what is happening with uranium and uranium enrichment in the U.S. Since the establishment of the Megatons to Megawatts™ Program in 1994, Russia began supplying approximately 80% of the uranium which is currently used as fuel in our nuclear reactors. This agreement between Russia and the U.S. began the dismantling of Russian nuclear warheads and recycling process in which bomb-grade materials are down-blended into low enriched uranium (LEU) suitable for use in fabricating commercial nuclear reactor fuel. This agreement is coming to an end in 2013.

There are four companies investing heavily (approx. $10B) in domestic enrichment: (1) USEC is developing a centrifuge enrichment facility in Pikeston, Ohio; (2) LES is making great progress at their centrifuge enrichment facility in Eunice, New Mexico; (3) Areva plans to construct an enrichment facility in Eagle Rock, Idaho; and (4) GE-Hitachi announced plans for utilizing laser enrichment technology in Wilmington, North Carolina. Mr. Laflin explained that the output totals projected for all combined plants still do not meet the need for reactor fuel today. Both Areva and LES have announced plans to double their plant capacity. Of concern is that 90% (by volume) of the uranium that goes through the enrichment process remains in DUF_6 tails. Based on projected annual production of enriched uranium or nuclear fuel proposed by these facilities (close to 90M lbs. by 2018), DUF_6 tails will rapidly approach 400M pounds by 2018.

Mr. Laflin discussed the DOE plans to build two de-conversion facilities. They began a two-year $1 billion project about eight years ago to de-convert DUF_6 stock piles that the government produced. The DOE facilities are looking into turning DUF_6 into waste and appear to have about 25 years worth of work ahead. Companies like LES are looking into near-term solutions that are also environmentally friendly. INIS realizes that there is a lot of remaining use in DUF_6 including uranium and fluorine recovery. Their objective is to take DUF_6 product that has no useful uranium recovery and extract fluorine which is a valuable commodity in the U.S.

He further explained that the proposed site in Hobbs, New Mexico will be a multi-purpose facility. Services will include DUF_6 off-take agreements for de-conversion with initial capacity equivalent to processing 575 DUF_6 tails per year and FEP (exclusive to INIS). The end products of de-conversion will be high purity, hydrofluoric acid (HF), silicon tetrafluoride gas (SiF_4) and boron trifluoride (BF_3) which are in high demand for a wide range of manufacturing applications including circuitry construction for compact high-speed low-heat generation electronics, solar

panels, aluminum metals, and environmentally friendly refrigerants. The waste product produced by de-conversion is depleted uranium oxide (UO_2) which is considered stable for handling and disposal.

The development of the site will be built in phases. Phase I will involve building a plant that will de-convert DUF_6 to an intermediate step, DUF_4, which is the raw starting material for FEP. They intend to use the best available technology for de-conversion and utilize acquired assets from the only complete de-conversion plant in the U.S., Sequoyah Fuels facility near Gore, Oklahoma. Mr. Laflin explained that the patented FEP process involves heating DUF_4 in a reaction chamber with a metal oxide such as SiO_2. Fluorine separates from the uranium and combines with gaseous metal oxide. This process will produce high purity fluoride gases in one step which can be sold directly into the market. Phase II will start in 2016 and will involve a second patented process with direct DUF_6 to UO_2 conversion path. This process will also produce high purity HF. He added that the facility will utilize solar power and geo-thermal heating/cooling to offset as much of the administrative electrical loads as possible. Mr. Laflin assured that they will only receive DUF_6 when it is ready to be de-converted and there is no intention of the site becoming an overflow storage facility. The facility itself will only utilize 30 acres of the 640-acres site to provide an additional level of assurance to the public that there would be no adverse environmental impact. The project timeline includes submission of the NRC License Application by November 2009. Construction is anticipated to begin in the first quarter of 2011 with operations commencing in the second quarter of 2012.

With regard to environmental and waste considerations, Mr. Laflin outlined that there was a lengthy screening process for site selection and they have received wide public acceptance. It is estimated that the facility will employ 165 full-time employees. He added that every one of the plant's systems will have double or triple redundancy for filtration or scrubbing and will surpass New Mexico Environment Department's (NMED) air emission thresholds. Water usage has been estimated at less than 10,000 gallons per day and will be filtered thoroughly and reprocessed to assure zero ground water discharge.

At the end of all of the processes, depleted uranium oxide (DUO) is chemically stable and can be safely disposed of as Class A low-level waste. Energy*Solutions* facility in Utah is currently the only disposal site licensed to dispose of DUO. Waste Control Specialists facility in Texas may provide some competition in the near future. By 2018, Mr. Laflin anticipates disposing of close to 70,000 cubic feet of DUO per annum while estimating that the INIS facility will be de-converting one-fourth of the national DUF_6 tails produced.

Other waste disposal will include the by-products of neutralizing scrubbing materials classified as RCRA waste. These volumes will be minimal. Another service INIS may provide is cylinder cleaning and refurbishing. Cylinder cleaning would introduce TENORM to the facility which has not yet been addressed but is currently being explored.

Mr. Laflin introduced some considerations for the Board. Under Rule 6.3.3 D a certification from the generator that the waste was generated within the compact region must be addressed. It is Mr. Laflin's position that it could be argued that DUF_6 is not a waste even when it is imported to the facility for de-conversion because there is recoverable uranium and fluorine. Waste exports of DUO are anticipated in large volumes and Mr. Laflin would like the Board to consider annual authorization.

In closing, Mr. Laflin summarized the opportunity the facility will have in filling a void in the nuclear fuel cycle. He added that the technologies discussed have been proven and that the management team has experience in uranium processing and fluorine extraction. The facility will produce environmentally important products and an economic stimulus for the region while minimizing environmental impact.

Mr. Slosky addressed one of Mr. Laflin questions by explaining that many of the in-region generators receive annual export permits.

Mr. Curry asked about the status of where INIS is with the NMED's air emissions and ground-water protection permits to confirm that the facility meets all of the requirements and standards. Mr. Laflin responded by assuring that they will apply for all requested permits and explained that INIS has a long history of working closely with the State of Idaho and the NRC to meet all of the requirements of their facility licensing.

CONSIDERATION OF AMENDMENTS TO RULE 6 (EXPORT) & RULE 7 (IMPORT)

Mr. Slosky directed the Board to Tab F. He explained that the amendments were prompted when Particle Measuring Systems (PMS) approached the Board for clarification of import/export issues regarding their business model. PMS is located in Colorado and manufactures devices that contain radioactive sources. PMS customers return devices to them which are ultimately disposed of when they are no longer useful.

One issue raised is how PMS should best receive back sources from their customers that are located worldwide. PMS also requested clarification on how to dispose of these devises and sources. Ms. Green and Mr. Slosky agreed that a couple of simple rule changes would be the most appropriate way to address their issues. These revisions are consistent with long-standing Board policy and Rule 6 where it has been national/international policy that sources should be returned to the manufacturer when possible. Rule 6 has authorized export of sealed sources to the manufacturer outside of our compact without requiring an export permit. It makes sense to allow these revisions so that devices are properly disposed of.

Mr. Slosky suggested that Rule 7 be amended to grant an import permit by rule that allows manufactures of devices containing sources manufactured within our region to be returned from their customers without obtaining an import permit.

Once those devices are ready to be disposed of by the manufacturer, we thought additional information would be required of the application to demonstrate that they originated within our region. The drafted amendment to Rule 6 will close this potential loophole before it becomes a problem.

Another issue that has increased over the years with processors on the East coast and some disposal facilities not wanting to submit the Board required reports that allow us to track our waste from generators through the processor to the disposal site. Revisions will address compliance with Board reporting requirements.

Ms. Green added that she made editorial revisions to assure that the language is appropriate.

Mr. Curry asked PMS about their views on the amendments. Mr. DiSalvo with PMS expressed that they do not see any problems with the amendments. He further expressed that he understands the benefit to their customers in having this issue addressed now as many will want to purchase new instruments and want to know in advance what will be expected.

Mr. Curry asked who might object to these changes. Mr. Slosky explained that PMS has had an opportunity to review the proposed changes and may be interested in presenting their concerns. Mr. DiSalvo with PMS stated that they have no concerns with the changes and added that he believes that this will help to clarify the process for future customers purchasing new instruments.

Mr. Slosky clarified that if the source is being recycled the Board does not regulate it. He further explained that the requirement to pedigree the device only applies to the device manufacturer and does not apply to the user. Mr. Slosky recommends a July 1, 2009 effective date if the Board decides to accept the changes. Mr. Baughman made a motion to amend the rules as presented; Mr. Drozdoff seconded; the motion carried unanimously.

STATUS OF CLEAN HARBORS REGIONAL FACILITY

Ms. Opila of the Colorado Department of Public Health & Environment (CDPHE) was asked to provide an update on the Clean Harbors Deer Trail Facility (CHDTF) litigation. There are three suits facing the facility. The first of which was filed by Adams County appealing the license and RCRA permit. This lawsuit was heard in the Supreme Court over six months ago and is still awaiting decision.

In the lawsuit filed against CHDTF by Adams County, the County is claiming that the receipt of waste from the City and County of Denver was in violation of the certificate of designation that was issued by the County. CDPHE intervened on behalf of CHDTF. The court granted summary judgment in favor of CHDTF. Adams County is appealing that decision.

The State of Colorado filed suit against Adams County for misuse of funds from the Hazardous Substance Response Fund and the court granted partial summary judgment in favor of the state ordering Adams County to stop using the money for those purposes, pay the fund back, and conduct an independent audit of the fund. Adams County filed for a stay of the repayment of the fund pending appeal and the stay was granted.

Ms. Green added that on the case appealed to the Colorado Supreme Court, is still pending. The only issue at hand is whether or not a subordinate unit of government has standing to sue its "maker." For example, counties in Colorado are just arms of the state so the issue is whether an arm of the state can sue the body. The other substantive issues raised will not be answered by this decision. She added that the Board is not involved in any of these law suits.

Additionally, the CHDTF license was amended in March to authorize disposal of materials containing radium contamination resulting from activities involving purposefully concentrated radium 226. This material was previously authorized under the license, but now includes changes to the definition of byproduct material. This material fell under the definition of byproduct material and not NORM or TENORM and had to be specifically authorized in the license. The authorized type of waste or concentration of radioactive material contained in the waste was not changed. The license and fact sheet are located on the State of Colorado web site at http://www.cdphe.state.co.us/hm/hwy36.htm.

UPDATE ON NATIONAL DEVELOPMENTS

Mr. Slosky offered to submit an email to the Board with an update due to the time constraints of this Board meeting. He added that there is nothing that requires action by the Board at this point.

EXECUTIVE DIRECTOR'S REPORT

Mr. Slosky directed the Board to Tab H and reported that the Board had $319,480 in liquid assets as of May 31, 2009. He added that there is nothing unusual in the waste disposal reports.

BUDGET VS. EXPENDITURE COMPARISON

Mr. Slosky directed the Board to Tab I and explained that through May the Board has expended less than 80% of the total budget to date. Other than Legal expenses, Board expenses have been modest this fiscal year.

With no further issues, at 2:37 p.m. Mr. Curry moved to adjourn Regular Meeting of June 18, 2009. Mr. Baughman seconded; the motion carried unanimously.