

**DRAFT MINUTES
PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
LOW-LEVEL WASTE ADVISORY COMMITTEE (LLWAC) MEETING**

Rachel Carson State Office Building

October 10, 2017

Attendance

LLWAC Members and Alternates

Edward Black, PA State Association of Township Commissioners
Honorable Becky Corbin, PA House of Representatives
Holly Fishel, PA State Association of Township Supervisors
Richard Fox, PA House of Representatives
Harry Garman, PA Society of Professional Engineers
Ernest Hanna, PA Chamber of Business and Industry
Steven King, Pennsylvania State University, Hershey Medical Center
Honorable William Kortz, PA House of Representatives
Jo Ellen Litz, County Commissioners Association of PA
Brian Lorah, Pennsylvania State University, Hershey Medical Center
Joanne Manganello, PA Senate
Lee Ann Murray, DEP Citizens Advisory Council
William Ponticello, PA Council of Professional Geologists
Mark Ross, Exelon Corporation (Vice-Chairperson)
Carol Rubley, League of Women Voters of PA
Jeff Schmidt, Sierra Club, PA Chapter
Katherine Shelly, PA Farm Bureau (Chairperson)
Cathleen Woomert, PA Medical Society

Department of Environmental Protection (DEP) Staff

Patrick McDonnell, DEP Secretary
David Allard, Bureau of Radiation Protection (BRP)
Rich Janati, BRP
Stefanie Muzic, BRP
Andrew Taverna, BRP
Neil Bakshi, Office of Policy
Dave Shetron, Legislative Office
Keith Salador, Bureau of Regulatory Counsel

Members of the Public

Craig Benson, PA Farm Bureau
Teresa Irvin McCurdy, TD Connections, Inc.
Isaac Riston, PA House Fellowship Program

Welcome and Meet & Greet

DEP Secretary Patrick McDonnell welcomed the committee members and expressed his appreciation for their participation on the advisory committee. He said DEP is going through a process for reassessing our public participation policies, and the goal is to make sure we have the right approach across DEP. He said our advisory committees are a key part of this process. He encouraged the committee to look at what DEP is doing through the Office of Policy. As it relates to low-level radioactive waste (LLRW), the Secretary stated that we have some good institutional knowledge within the Department. He also acknowledged the challenges with maintaining the institutional memory. He said it is a critical issue for the Department in terms of how we recruit, train, and retain staff.

The committee chair, Ms. Shelly, said the committee has a fairly long history of having worked with DEP in maintaining the safety of LLRW from the time when the siting process was being developed. She thanked the Secretary for taking the time to meet and speak directly with the committee members.

Policy Office Report and Update

Mr. Bakshi of DEP's Policy Office provided a discussion on the recent initiative by DEP to update three relatively old documents: Policy on Development and Review of Regulations, Policy on the Development and Publication of Technical Guidance, and Policy on Advisory Committee Guidelines. He said as part of this process, DEP intends to increase transparency and clarity. We also intend to facilitate meaningful conversation between DEP and all stakeholders interested in participating in the policy development process. We have also removed the Department's internal workflow processes into standard operating procedure (SOP) documents for simplicity. He said SOPs are just desk manuals for DEP staff to use internally. The old documents were developed in the 1990s and contain a significant amount of unnecessary details, which have been removed from the updated documents.

Mr. Bakshi provided an overview of the key revisions to the three policy documents. As it relates to the Policy on Advisory Committee Guidelines, he stated DEP currently works with over 25 advisory committees, including the Citizens Advisory Council. He said the new version clarifies the roles of advisory committee members, the public, and DEP in terms of planning and holding advisory committee meetings. It also clarifies the role of advisory committees and members in the regulatory review and technical guidance review process. He stated that DEP will always share all draft regulations and technical guidance documents with the advisory committees. He also pointed out that all three of these policies will be noticed as drafts in the October 14, 2017, edition of the Pennsylvania Bulletin.

A committee member asked if DEP considers any of the existing advisory committees to be obsolete and not currently relevant and, if so, is DEP considering disbanding some? Mr. Bakshi said some of DEP's advisory committees, including the two for the Radiation Protection Program, are required by statute. Therefore, it is not within DEP's purview to disband them, nor does DEP see anything negative about advisory committees. Another committee member asked if DEP has identified any areas where an advisory committee should be established where

specific expertise doesn't currently exist. Mr. Bakshi said to his knowledge there has been no discussion of that within DEP, but it certainly is a valid conversation.

Committee Business

Election of Officers

The LLWAC members voted unanimously to re-elect Katherine Shelly as Chairperson and Mark Ross as Vice-Chairperson for an additional year.

Approval of the Meeting Minutes

The LLWAC members voted unanimously to approve the minutes of the October 7, 2016, annual meeting.

Next Annual Meeting

The committee decided to hold its next meeting on September 28, 2018, with an alternate date of October 4, 2018.

Status of Commercial LLRW Disposal Facilities

Mr. Janati provided an overview of the federal and state laws pertaining to LLRW management and disposal and the formation of LLRW regional compacts. He also provided an update on the status of commercial LLRW disposal facilities and recent developments involving these facilities.

There are currently four (4) commercial LLRW disposal facilities in the United States. These facilities are Barnwell in South Carolina; the EnergySolutions facility in Clive, Utah; Richland in Washington; and the Waste Control Specialists (WCS) facility in Texas.

- The Barnwell facility accepts all classes of LLRW from the three members of the Atlantic Compact (Connecticut, New Jersey and South Carolina). As of July 1, 2008, this facility no longer accepts LLRW from outside the Atlantic Compact. The current projected closure date for this facility is 2038.
- The EnergySolutions Clive facility accepts Class A waste from all states except those in the Northwest and Rocky Mountain Compacts. The facility also provides for disposal of bulk waste and large components such as steam generators from the nuclear power plants. This facility is not a regional facility and is regulated by the state of Utah. The Utah Department of Environmental Quality is currently conducting a regulatory review for disposal of large quantities of depleted uranium and Class A radioactive sealed sources at this facility. Mr. Janati said this facility accepted and disposed of about 41,192 radioactive disused sealed sources between 2013 and 2016 under a variance granted by the state of Utah. He said the current projected closure date for this facility is 2050.

- The Richland facility is a regional facility and accepts all classes of LLRW but only from the member states of the Northwest and Rocky Mountain Compacts. This facility also accepts Naturally Occurring and Accelerator-Produced Radioactive Materials (NARM) from the Appalachian Compact and other states and compacts. The current closure date for this facility is 2056.
- The WCS facility is a regional facility for the Texas Compact (Texas and Vermont) and accepts all classes of LLRW from both commercial and federal facilities. In April 2012, the Texas Commission on Environmental Quality (TCEQ) authorized WCS to accept waste and begin disposal activities. Additionally, the Texas Compact Commission has established rules for the importation and exportation of LLRW into and out of the Texas region. The annual limit on radioactivity for out-of-compact waste is 275,000 curies (Ci), but there is no annual limit on volume for out-of-compact waste. The TCEQ recently granted an increase in the total capacity of the commercial facility from 2.3 million cubic feet (ft³) to 9 million ft³. Additionally, disposal of large quantities of depleted uranium and Greater-Than-Class C (GTCC) waste is being considered by WCS. The current projected closure date for this facility is 2045.

Mr. Janati said the WCS facility is currently facing economic challenges. Some of the contributing factors include storage of irradiated reactor components at the reactor sites due to the high cost of disposal of this type of waste at the WCS facility; blending of Class A and Class B wastes and disposal of Class A waste at the EnergySolutions facility in Utah due to lower disposal fees; and the annual limit on the radioactivity of LLRW (curie content) for disposal of out-of-compact waste at the Texas facility. Additionally, the Texas Compact Commission is allowing the LLRW generators in the Texas Compact to ship their waste to the EnergySolutions facility in Utah.

Ms. Shelly asked if management of GTCC waste is being appropriately addressed. Mr. Janati said GTCC is not considered LLRW, and there is no disposal capability for GTCC waste in the U.S. He said the Department of Energy (DOE) has issued a final Environmental Impact Statement for disposal of GTCC waste and is making progress toward addressing this issue.

Recent Developments

Mr. Janati provided an overview of several significant national developments as follows:

- U.S. District Court Prohibits Proposed Acquisition of WCS by EnergySolutions

In November 2015, EnergySolutions announced that it has a definitive agreement to acquire WCS, the operator of the waste disposal facility in Texas. In November 2016, the U.S. Department of Justice (DOJ) filed a civil antitrust lawsuit seeking to block EnergySolutions' proposed acquisition of WCS. According to the lawsuit filed by the DOJ, the transaction would deny commercial generators of LLRW the benefits of vigorous competition that has led to significantly lower prices, better service, and innovation in recent years. In June 2017, the U.S. District Court in Delaware entered judgement in favor of the DOJ and blocked the acquisition of WCS by EnergySolutions.

- NRC Staff Released SECY-16-0115 re Financial Assurance for Disposition of Category 1 and 2 Byproduct Material Radioactive Sealed Sources

In October 2016, NRC staff released SECY-16-0115, in which the agency staff seek Commission approval to initiate a rulemaking to require financial assurance for the disposition of Category 1 and 2 byproduct material radioactive sealed sources. The rulemaking would revise 10 CFR 30.35, “Financial Assurance and Recordkeeping for Decommissioning.” The staff offers the following projected rulemaking schedule in SECY-16-0115: initiate regulatory basis phase in October 2017; complete regulatory basis in October 2018; publish proposed rule in October 2019; and publish final rule in October 2020.

- NRC Issues Staff Requirements Memorandum (SRM) re Final Rule for LLRW Disposal

In September 2017, the NRC issued an SRM in response to SECY-16-0106, which sought Commission approval to publish a final rule that would amend 10 CFR Part 20, “Standards for Protection Against Radiation,” and 10 CFR Part 61, “Licensing Requirements for Land Disposal of Radioactive Waste.” Mr. Janati said the SRM states that the draft final rule published in SECY-016-0106 should be revised to incorporate several changes. He said one of the most significant changes is to reinstate the “grandfathering provision” for applying requirements to only those sites that plan to accept large quantities of depleted uranium for disposal.

Information on LLRW Generation for the Appalachian Compact

Mr. Janati provided background information on the DOE’s Manifest Information Management System (MIMS). The MIMS contains information on LLRW disposal at the current commercial LLRW disposal facilities. Mr. Janati said that, for the past several years, the Department has significantly reduced the regulated community’s administrative LLRW reporting requirements by obtaining the appropriate disposal information directly from the MIMS database.

During calendar year 2016, the Appalachian Compact generated about 245,049 ft³ of LLRW. Pennsylvania disposed of about 237,692 ft³, most of which was generated by the government (due to the decommissioning of the Safety Light site in PA by the EPA), the utility, and industrial sectors. Maryland disposed of about 7,351 ft³ of waste, most of which was generated by the utility sector. Delaware and West Virginia generated about 4.5 ft³ and 1.8 ft³, respectively. Almost all Class A waste generated within the Compact was shipped to the EnergySolutions Clive facility. Mr. Janati also provided information on the radioactivity (curie) of waste generated in the Compact. The Compact generated about 2,230 Ci of LLRW. Pennsylvania generated about 2,021 Ci of waste, and Maryland generated about 209 Ci of waste. West Virginia and Delaware generated about 0.35 and 0.014 Ci, respectively.

Mr. Janati provided a brief discussion of waste generation trends in the Compact for the period of 1996 through 2016. The Barnwell disposal facility in South Carolina stopped accepting waste from outside the Atlantic Compact in 2008, resulting in the storage of Class B and C wastes, mainly by the nuclear utilities, during 2009 through 2013. The total radioactivity reported in MIMS during this period represents only Class A waste that was shipped to the Clive facility in

Utah. Beginning in 2014 and through 2016, the reported radioactivity also includes Class B waste that was disposed of at the WCS facility in Texas.

Mr. Janati presented a pie chart showing that in 2016, about 99.8% of the Compact's LLRW by volume was disposed of at the Clive facility, and only 0.21% by volume was disposed of at the WCS facility. In comparison, about 56% of the Compact's LLRW by radioactivity was disposed of at the Clive facility, and about 44% by radioactivity was disposed of at the WCS facility.

Mr. Janati said the nuclear utilities in the Appalachian Compact are currently storing their irradiated reactor components in the spent nuclear fuel pools onsite, mainly due to the high cost of disposal of this waste stream at the WCS facility.

Overview of LLW Forum Report on Disused Sealed Sources

Mr. Janati provided an overview of the LLW Forum Report on Disused Sealed Sources. Mr. Janati is a member of the LLW Forum executive committee and serves on the Disused Sources Working Group (DSWG). He reported that the National Nuclear Security Administration (NNSA) had asked the LLW Forum, a national association of states, radioactive waste compacts, federal agencies, and industry representatives, to form the DSWG and develop recommendations for improving the management of disused sealed sources that pose a threat to national security. The DSWG solicited input from various stakeholders and issued its final report in March 2014.

Mr. Janati said the report points out that there are approximately two million sealed sources and thousands of disused sealed sources in the United States. He said the existing NRC's National Source Tracking System (NSTS) includes only Category 1 and 2 sources and not Category 3 through 5 sources. Some of these sources pose a threat to national security as they could be used as a radiological dispersion device (RDD). He said the EPA has estimated that an RDD incident in a metropolitan area could result in about 39 million cubic feet of radioactive waste requiring disposal.

Mr. Janati said the report identifies six major factors contributing to the disused source problem:

- The life cycle costs of managing and ultimately disposing of sealed sources are not internalized.
- The practices of the NRC and the NNSA do not fully reflect a consistent view of the sources that pose a threat to national security.
- The regulatory system is not adequate for the post-9/11 threat environment.
- There are no financial incentives for disused sources to be used, recycled, or disposed of in a timely manner.
- The opportunities for recycling and reusing sealed sources are underutilized.

- Type B shipping containers needed to transport certain high-activity sealed sources are in short supply and very expensive.

Mr. Janati provided a summary of key recommendations in the DSWG report for addressing the problems associated with disused sealed sources. He said the report points out that the current regulatory system should be restructured to provide economic incentives for the prompt reuse, recycling, or disposal of disused sealed sources. Financial assurance requirements should be broadened to cover all Category 1 through 3 sources for the full cost of transportation and disposal. Licensees should also be required to pay an annual possession fee for each sealed source in inventory.

The report points out that the U.S. Government should reach an agreement across agencies regarding which sealed sources pose a threat to national security. The NRC considers only Category 1 and 2 sealed sources to present a national security risk, but the NNSA believes that some Category 3 sealed sources pose a national security threat as well. The report recommends that a Specific License (SL) should be required for all Category 3 sources, and all such sources should be tracked in the NSTS. Mr. Janati said there are additional requirements for the possession of SL sources that are not required for the possession of Generally Licensed (GL) sources.

The report recommends that the NRC and Agreement States should develop regulations to limit the storage of disused sealed sources to two years unless there is a demonstrated future use. The report also recommends that a detailed study should be conducted, possibly by the EPA, to identify measures to promote opportunities for the reuse and recycling of sources. It recommends the creation of a secure exchange program, administered by the EPA, to facilitate the transfer of sources among various licensees or users of sealed sources as needed. The report makes several recommendations associated with limited availability of Type B shipping containers. It recommends that the NNSA should identify several foreign package designs that would have widespread applicability to disused sealed sources in the U.S. and seek NRC approval for domestic use.

Mr. Janati said the DSWG will continue dialogue with various stakeholders, including the Organization of Agreement States, the Conference of Radiation Control Program Directors (CRCPD), and the Health Physics Society, and will pursue implementation of recommendations.

A committee member asked what PA's intent is with respect to the CRCPD's Suggested State Regulations (SSR) on financial assurance. Mr. Allard said the DEP's Bureau of Regulatory Counsel is currently reviewing the SSR, and the program is looking at other states that have already implemented more stringent financial assurance requirement (i.e., Illinois). He said the program is also monitoring the NRC's recent rulemaking initiative to address financial assurance of byproduct materials.

Presentation by Exelon

Mr. Ross provided an overview of Exelon Generation's nuclear fleet and radioactive waste management and oversight. He said Exelon owns and operates 23 nuclear power plants at 14 sites in Illinois, Maryland, New Jersey, New York, and Pennsylvania. He said the main goals of

Corporate radioactive waste management are governance and oversight of the radioactive waste programs, policies, and procedures. Corporate establishes performance indicators (PIs) for the sites. Corporate also provides oversight over the contractors, mainly EnergySolutions.

Mr. Ross discussed challenges facing the radioactive waste systems. He said the radioactive waste program is constantly upgrading and looking at new methods to address these challenges. He said Corporate has developed a significant number of PIs. There was only one PI related to radioactive waste for each site in the past. There are now five PIs for every site within the Exelon fleet. Each site is expected to establish three cost-saving initiatives on an annual basis: tangible, intangible, and cost avoidance. There are monthly reports and monthly calls, and best practices are shared within the fleet. Mr. Ross stated that Exelon's contract with EnergySolutions is a performance-based contract, and bonuses are adjusted accordingly. Each site has direct oversight of contractor staff who process Exelon's waste at that site.

Mr. Ross discussed transportation of LLRW from Exelon nuclear power sites. He said Exelon owns a fleet of transport casks, including four Type A casks and one Type B cask. Exelon's Type A casks include two Super 200 (S200) casks, which are of Model 14-215 size cask and are heavily shielded; and two Model 14-210 H casks that are being used for routine shipments of waste for disposal. The Model RT-100 Type B cask is being used for shipments of Class B waste containing higher radiation dose. He stated that EnergySolutions/Hitman provides transportation services, maintenance, and scheduling for the Exelon cask fleet. EnergySolutions also provides transportation services for a wide range of trailer, cask, and sea-van options.

Public Comment

None

Adjournment

The meeting was adjourned at approximately 1:15 p.m.