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

September 28, 2018

Attendance

LLWAC Members and Alternates

Edward Black, PA State Association of Township Commissioners
Timothy Collins, PA Senate
Richard Fox, PA House of Representatives
Yuanqing Guo, Pennsylvania State University
Leda Lacomba, PA House of Representatives
Jo Ellen Litz, County Commissioners Association of PA (via phone)
Brian Lorah, Pennsylvania State University, Hershey Medical Center
Mark Ross, Exelon Corporation (Vice-Chairperson)
Carole Rubley, League of Women Voters of PA
Keith Salador, DEP Citizens Advisory Council
Katherine Shelly, PA Farm Bureau (Chairperson)
Jesse Sloane, Pennsylvania Society of Professional Engineers
Nick Troutman, PA Senate
James Wheeler, Pennsylvania State Association of Township Supervisors (via phone)
Aaron Wilmot, Pennsylvania State University

Department of Environmental Protection (DEP) Staff

David Allard, Bureau of Radiation Protection (BRP)
Rich Janati (BRP)
Andrew Taverna (BRP)
Neil Bakshi, Office of Policy
Robert Schena, Office of Chief Counsel

Others Present

Eric Epstein, TMI - Alert
Jen Quinn, Sierra Club
Heather Shoemaker, GZA GeoEnvironmental, Inc.

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 10, 2017 annual meeting.

Next Annual Meeting

The committee decided to hold its next meeting on October 4, 2019 with an alternate date of October 3, 2019.

Status of Commercial LLRW Disposal Facilities

Mr. Janati provided an update on the status of commercial LLRW disposal facilities and recent national developments involving management and disposal of low-level radioactive waste (LLRW).

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.

1. 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.

2. 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. The current projected closure date for this facility is 2050.

3. The Richland facility is a regional facility and accepts all classes of LLRW but only from the Northwest and Rocky Mountain Compacts. The current closure date for this facility is 2056.

4. 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 granted an increase in the total capacity of the commercial facility from 2.3 million cubic feet (ft^3) to 9 million ft^3. 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.

   In June 2017, Texas legislation became effective that reduces the state fees for disposal of LLRW at the facility. It is expected that the reduction in fees will increase WCS revenue by approximately 20 percent. Mr. Janati said WCS is also working with the TCEQ to lower LLRW disposal rates at the WCS facility.

Recent Developments

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

- WCS Acquired by J.F. Lehman & Company - In January 2018, WCS announced the completion of their sale by Valhi, Inc. to an investment affiliate of J.F. Lehman & Company, which is a leading middle-market private equity firm focused on the government, defense and aerospace sectors. J. F. Lehman stated that it has a proven track record that will help WCS achieve its strategic plan and support its continued growth.

- NRC Issues a Federal Register Notice re Greater Than Class C (GTCC) Waste - In February 2018, the Nuclear Regulatory Commission (NRC) issued a Federal Register Notice to seek input from various stakeholders in identifying issues associated with the development of a regulatory basis for GTCC waste. In December 2015, the Commission directed the NRC staff to develop a regulatory basis for disposal of GTCC and transuranic waste through means other than a deep geologic disposal. The Commission also directed the staff to receive input from stakeholders during the development of the regulatory basis. Currently, there is no disposal facility in the United States for GTCC waste. GTCC is LLRW, but its concentration exceeds the concentration limits in 10 CFR Part 61 waste classification table and therefore, it is not acceptable for disposal at the existing commercial LLRW disposal facilities. By statute, NRC is the regulatory agency and the Department of Energy (DOE) is responsible for management and disposal of GTCC waste. In February 2016, DOE issued the final Environmental Impact Statement (EIS) for GTCC waste. The EIS considers several alternatives for disposal of GTCC waste. DOE has submitted a report to Congress on disposal alternatives and is awaiting action by Congress before it issues a Record of Decision.

- NRC Issues a Federal Register Notice re Very Low-Level Waste (VLLW) Scoping Study - In February 2018, NRC issued a Federal Register Notice announcing the agency's plan to

conduct a scoping study and identify possible options to improve and strengthen the NRC's regulatory framework for the disposal of anticipated large volumes of VLLW associated with the decommissioning activities and waste that might be generated by a radiological dispersal device. NRC is seeking stakeholder input and perspectives. This task is given a medium priority in the NRC's Low-Level Waste Programmatic Assessment since there is no significant safety issue driving VLLW disposal. Mr. Janati said the NRC should consider economic impact on the existing LLRW disposal facilities if large amount of VLLW can be disposed of at hazardous or municipal solid waste landfills. He also said it is unknown at this time if the new waste stream would fall under the authority of the LLRW compacts.

- NRC Issues Staff Requirements Memorandum (SRM) re Final Rule for LLRW Disposal (10 CFR Part 61) - In September 2017, the NRC issued a 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." The SRM states that the draft final rule published in SECY-016-0106 should be revised to incorporate several changes. 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. The NRC staff prepared the revised draft final rule and is awaiting Commission's review and approval to proceed with the final rule.

Ms. Shelly asked that DEP staff continue to keep the committee abreast of any new developments regarding the NRC's scoping study for VLLW.

Information on LLRW Disposal 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 DEP has significantly reduced the regulated community's administrative LLRW reporting requirements by obtaining the appropriate disposal information directly from the MIMS database.

Mr. Taverna discussed the waste disposal information for calendar year 2017. The Appalachian Compact disposed of about 495,889 ft^3 of LLRW. Pennsylvania disposed of about 489,266 ft^3, most of which was generated by the government (due to the decommissioning of the Safety Light site in PA by the EPA), the industrial and the utility sectors. Maryland disposed of about 6,588 ft^3 of waste, most of which was generated by the utility sector. Delaware and West Virginia disposed of about 34.1 ft^3 and 0.68 ft^3, respectively. Almost all Class A waste generated within the Compact was shipped to the EnergySolutions Clive facility. Mr. Taverna also provided information on the radioactivity (curie) of waste generated in the Compact. The Compact generated about 1,893 Ci of LLRW. Pennsylvania generated about 1,714 Ci of waste, and Maryland generated about 179 Ci of waste. West Virginia and Delaware generated about 0.0017 Ci and 0.00001 Ci, respectively.

Mr. Taverna provided a brief discussion of waste disposal trends in the Compact for the period of 1997 through 2017. 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 during this period represents only Class A waste that was shipped to the Clive facility in Utah. Beginning in 2014 and through 2017, the reported radioactivity also includes Class B waste that was shipped to the WCS facility in Texas. Mr. Janati said the Appalachian Compact has not yet made any shipments of irradiated reactor components to the WCS facility. He also said due to blending of Class A waste with Class B waste, the volume of Class B waste that would have been disposed at the WCS facility has diminished significantly.

Mr. Taverna presented a pie chart showing that in 2017, about 99.74% of the Compact's LLRW by volume was disposed at the Clive facility in Utah, and only 0.26% by volume was disposed at the WCS facility in Texas. In comparison, about 69% of the Compact's LLRW by radioactivity was disposed at the Clive facility, and about 31% by radioactivity was disposed at the WCS facility.

Requirements for Waste Minimization Plans

Mr. Janati provided an overview of DEP's Waste Minimization (WM) Guidance Document. He said this document establishes guidelines and criteria for future rulemaking and provides LLRW generators with advanced notice of DEP's intended approach for regulating WM programs. It also promotes source reduction as well as volume reduction.

Mr. Janati discussed key issues contained in the WM document including WM priorities, small generator exemptions, WM plan requirements and program implementation. He said the current DEP policy is that the WM rulemaking process will be commensurate with the opening of the Compact's regional LLRW disposal facility. He said DEP encourages the LLRW generators to use the WM Guidance Document for designing and implementing "voluntary" WM programs.

Mr. Ross pointed out that all nuclear power plants have implemented WM plans.

Mr. Salador said waste minimization and the information presented by Mr. Janati might be a good agenda topic for DEP's Radiation Protection Advisory Committee (RPAC) meeting.

Mr. Allard said DEP will take an action to prepare and distribute an Information Notice (IN) to all PA radioactive materials licensees. He said the IN will provide a link to DEP's WM Guidance Document (http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4639).

TMI-1 Possible Transition to Decommissioning

Mr. Janati said that in May 2017, Exelon announced it will prematurely retire its Three Mile Island (TMI) Generating Station Unit 1 on or about September 30, 2019. In June 2017, Exelon submitted a Cessation of Operation Letter to the NRC certifying the company's intent. However, the final shutdown decision will be based, in part, on possible legislative actions to help mitigate the station's economic challenges. He said the PJM (Pennsylvania, New Jersey and Maryland) Interconnection Reliability Study revealed no implications for the reliability of the grid due to TMI-1 shutdown. Mr. Janati said NRC will continue to maintain its regulatory authority

throughout the TMI-1 decommissioning transition. He said DEP will maintain an independent oversight review of TMI-1 decommissioning transition activities. Mr. Janati said TMI-1 decommissioning will be conducted in three stages: Decommissioning Transition, SAFSTOR and Site Restoration. He said as part of the initial decommissioning transition process, a Decommissioning Transition Organization has been formed by Exelon to execute the actions required for decommissioning including submittal of License Amendment Requests, Exemptions, and Post Shutdown Decommissioning Activity Report to the NRC.

During the SAFESTOR, Exelon will complete movement of fuel from spent fuel pool to an ISFSI (Independent Spent Fuel Storage Installation) on-site. The ISFSI or dry storage cask is designed for interim storage of spent nuclear fuel, and it is licensed separately from the nuclear power plant. Once the certification for permanent cessation of operations and permanent removal of fuel from the reactor vessel is officially recorded, the licensee can no longer operate the reactor or retain nuclear fuel within the reactor vessel under its NRC license. The decommissioning activities must be completed within 60 years of permanent cessation of operations. Following the completion of decommissioning activities and the final radiation survey, the site will be released in accordance with the license termination plan.

Mr. Ross pointed out that Peach Bottom Atomic Power Station Unit 1 has been placed in SAFESTOR for almost 30 years. He said he has been inside the Unit 1 several times, and the radiation exposure from the unit is negligible.

Mr. Allard said if there is no action on the part of the PA legislature by Spring 2019, TMI-1 will be shut down permanently. Ms. Shelly asked the legislative members in attendance to take notice of this date. She also asked DEP staff to keep the committee abreast of any new developments regarding possible shutdown of TMI-1 and the decommissioning transition.

Public Comment

None

Adjournment

The meeting was adjourned at approximately 12:33 p.m.