



Central Midwest Interstate  
Low-Level Radioactive  
Waste Commission

# THIRTY-FOURTH ANNUAL REPORT

July 1, 2018 – June 30, 2019

Prepared by the  
Central Midwest Interstate  
Low-Level Radioactive Waste Commission

Joseph G. Klinger  
Chairman

Dewey F. Crawford  
Secretary/Treasurer

Gary W. McCandless  
Commissioner

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## HISTORY

In response to a federal policy, declared in the Low-Level Radioactive Waste Policy Act of 1980 (1980 Act) (42 USC 2021b et seq.), that each state is responsible for assuring that disposal capacity is available for certain categories of low-level radioactive waste (LLRW) generated within its borders, the State of Illinois and the Commonwealth of Kentucky entered into the Central Midwest Interstate Low-Level Radioactive Waste Compact (CMC). Congress has consented to the CMC and the Southeast, Midwest, Central States, Rocky Mountain, Atlantic, Appalachian, Southwestern, Northwest and Texas Interstate Compacts.

## MISSION OF CENTRAL MIDWEST COMPACT

A three-member Commission administers the CMC. Illinois Commissioners are Chairman Joseph Klinger and Gary McCandless. Dewey Crawford is the Commissioner representing Kentucky and serves as the Secretary/Treasurer.

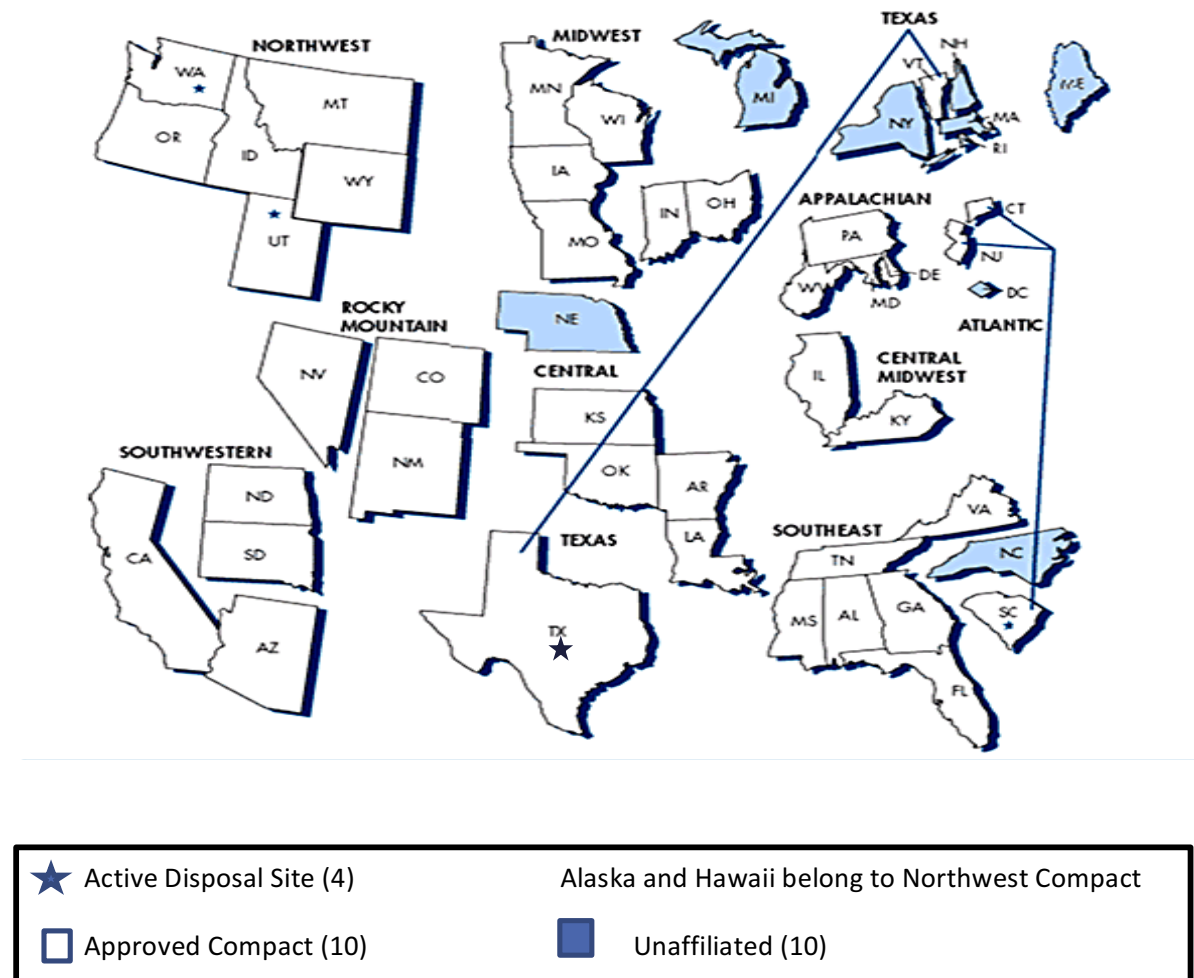
The Commission is required to adopt, and amend as necessary, a Regional Management Plan. The Regional Management Plan describes the number and type of regional storage, treatment, and disposal facilities needed; adopts policies regarding source and volume reductions; and describes alternative means for treatment, storage, and disposal of LLRW. The Commission is authorized to designate a host state for each regional facility, but only a state that generates more than 10 percent of their region's total volume of low-level radioactive waste. Illinois has been designated as the host state for a regional disposal facility. Use of storage, treatment, and disposal facilities in the region for LLRW originating from outside the region, and export of LLRW from the CMC region, is subject to Commission approval. The Commission may enter into an agreement or contract with a state, a group of states, or persons for access to a facility in the region.



## Central Midwest Interstate Low-Level Radioactive Waste Commission

# Low-Level Waste Compacts

<http://www.nrc.gov/waste/llw-disposal/licensing/compacts.html>



## Unaffiliated States

District of Columbia  
Massachusetts  
Nebraska  
New York

Maine  
Michigan  
New Hampshire  
North Carolina

Puerto Rico  
Rhode Island

## LOW-LEVEL WASTE DISPOSAL FACILITIES

There are four active, licensed low-level waste disposal facilities that are located in Agreement States (see [map](#)), however, only three are available to generators in the Central Midwest Compact. Additional information about the facilities may be found at the Web sites maintained by the respective Agreement States.

- **EnergySolutions Barnwell Operations, located in Barnwell, South Carolina**  
Barnwell previously accepted waste from all U.S. generators except those in the Rocky Mountain and Northwest [Compacts](#). Since 2008, Barnwell only accepts waste from the Atlantic compact states (Connecticut, New Jersey, and South Carolina). Barnwell is licensed by the State of South Carolina to receive wastes in Classes A-C.
- **U.S. Ecology, located in Richland, Washington**  
Richland accepts waste from the Northwest and Rocky Mountain [compacts](#). Richland is licensed by the State of Washington to receive wastes in Classes A-C.
- **EnergySolutions Clive Operations, located in Clive, Utah**  
Clive accepts waste from all regions of the United States. Clive is licensed by the State of Utah for Class A waste only.
- **Waste Control Specialists (WCS), LLC, located near Andrews, Texas**  
WCS accepts waste from the Texas Compact generators and outside generators with permission from the Compact. WCS is licensed by the State of Texas for Classes A, B, and C waste.

<http://www.nrc.gov/waste/llw-disposal/licensing/locations.html>



## Disposal Options for CMC

Generators in the Central Midwest Region continue to have access to the *EnergySolutions* disposal facility located in Clive, Utah for certain radioactive wastes. This facility accepts Class A waste, both containerized and un-containerized and naturally occurring radioactive materials. This facility also accepts mixed waste (i.e., waste that is both radioactive and chemically hazardous) generated in the Central Midwest region. The Commission anticipates that Illinois and Kentucky generators will continue to have access to the *EnergySolutions* facility.



Some of our generators, including our largest generator Exelon Corporation, have agreements with Waste Control Specialists LLC and dispose of their Class B and C wastes at the facility. CMC generators are very fortunate to have this disposal capability. Without this capacity the Class B and C waste would need to be stored indefinitely at the point of generation.



Waste considered to be naturally occurring radioactive material (NORM) can be disposed at the US Ecology Richland, Washington disposal facility, or at several US EPA RCRA Subtitle C landfills (NORM material with lower concentrations).



## Illinois Waste Generation – Current and Future Projections

In compliance with the Management Act, the Illinois Emergency Management Agency (IEMA) conducts an annual survey of the LLRW generators located in Illinois and any broker or processor that handles Illinois LLRW within or outside of the state. Each generator provides IEMA with information by completing the Generators Annual Survey about the types, quantities, and activity of LLRW generated, stored, treated, and disposed of and future LLRW shipment projections. Brokers and processors provide information regarding any and all Illinois waste received, treated, processed, and shipped for disposal by completing the Brokers' and Processors' Annual Survey.

IEMA operates a system to administratively track shipments of LLRW that have a point of origination or destination in the state of Illinois. Persons who ship LLRW into, out of, or within the state must obtain a permit from IEMA and report shipment information electronically to the tracking system. Brokers can provide the Electronic Data Transmission (EDT) files on behalf of their generator customers. IEMA provides the information collected by the tracking system back to the generators in the form of completed annual survey tables for generator verification.

Illinois LLRW generation in 2018 continued to demonstrate the typical variation in year to year production. The number of generators decreased in 2018 by nineteen.

### Illinois LLRW Generator Survey Response by Generator Category 2012 – 2018

Generator Category	2012	2013	2014	2015	2016	2017	2018
Academic	28	28	30	31	29	26	25
Fuel Cycle	2	2	2	2	2	2	2
Governmental	15	15	16	16	17	20	16
Industrial	57	57	62	64	63	61	57
Medical	313	313	302	296	288	288	279
Reactor	7	7	7	7	7	7	7
<b>Total</b>	<b>422</b>	<b>422</b>	<b>419</b>	<b>416</b>	<b>406</b>	<b>404</b>	<b>385</b>

**LLRW Volume Projections (ft<sup>3</sup>)**  
**2019 – 2025**

Year	2019	2020	2021	2022	2023	2024	2025
Academic	161	159	159	154	152	147	147
Fuel Cycle	500	100	350	100	150	200	250
Governmental	61	28	28	28	28	28	28
Industrial	7359	7231	7317	7221	7220	7220	7220
Medical	147	147	143	143	143	143	143
Reactor	144666	142726	150935	142666	144566	148935	144666
<b>Total</b>	152894	150391	158932	150312	152259	156673	152454

The IEMA 2018 Annual Survey required generators to project the amount of LLRW they expect to produce or possess between 2019 and 2025. This information is used by the agency for determining the development timeframe for a regional disposal facility or the need for an interim storage facility. Past history has indicated that the non-reactor generators underestimated volumes and activities by three to four times what was actually generated and disposed.



## Kentucky Waste Generation

Kentucky Cabinet for Health Services, Radiation Health Branch (RHB) conducts an annual survey of the LLRW generators located within the Commonwealth. Each generator completes the Annual Survey by listing the types, quantities, and activity of LLRW generated, stored, treated, and disposed. Additionally, Brokers and processors provide information regarding any and all waste received, treated, processed, and shipped out of the state for disposal. Shippers of LLRW into and out of the state must obtain authorization from RHB and identify the shipment. Please note that Kentucky's report is for calendar year 2018.

The Kentucky Radioactive Materials Section inspects and issues licenses to approximately 400 radioactive materials users in the fields of medicine, industry, research and academia. In addition, the program has issued 21 in vitro/in vivo general licenses and 164 other general licenses. The program also assists with oversight of radioactive materials and waste transportation throughout the state. The following report specifies the amount of radioactive waste material disposed or stored in 2018.

**Kentucky LLRW Waste Generator Report for 2018-2019**

Waste Generator	Year	Generator Category	Class of Waste	Form	Total Volume ft3	Rad Quantity mCi	Rad Nuclides	Disposal Method	Shipper/ Broker Comments
Centre College	2018	Academic	A						
Murray State University	2018	Academic	A	Liquid/ Solid	23.5	0.171	3H, 14C, 137Cs	Decay In Storage	
Northern Kentucky University	2018	Academic	A	Mixed	0.68	1.20E-04	210Po, 119Sn	Bionomics	
University of Kentucky	2018	Academic	A	Liquid/ Solid	4.9	3.33	3H, 14C, 32P, 209Po	Broker	Bionomics
Western Kentucky University	2018	Academic	A	Liquid/ Solid	8.2	6.2	137Cs, 238U, 232Th	Broker	Veolia ES Tech Sol
University of Kentucky	2018	Academic	A	Liquid	4.9	4.65	3H, 14C, 125I, 35S	Storage	
<b>TOTAL</b>	<b>2018</b>	<b>Academic</b>			<b>42.18</b>	<b>14.35112</b>			
Chase Environmental	2018	Industrial							
Clariant Corporation	2018	Industrial	A				238U	Storage	
Clariant Corporation	2018	Industrial	A	Liquid	1690	416.6	238U	Broker	Chase Environmental Group
Sud-Chemie	2018	Industrial							
Transport Logistics International	2018	Industrial	A	Mixed	378	0.02	U234, U235, 238U, Th234, Th 228	Broker	Waste Control Specialists
Transport Logistics International	2018	Industrial	A	Mixed			238U	Decay In Storage	
<b>TOTAL</b>	<b>2018</b>	<b>Industrial</b>			<b>2068</b>	<b>416.62</b>			
PETNET	2018	Medical	A	Liquid	15	3.5	57Co, 56Co, 109Cd, 181W, 65Zn	Broker	Philotechnics
PETNET	2018	Medical	A	Liquid	8.8	10.2	3H, 57Co	Decay In Storage	
<b>TOTAL</b>	<b>2018</b>	<b>Medical</b>			<b>23.8</b>	<b>5</b>			
Kentucky EPPC/DEP	2018	State Government	A	Liquid & Material					None Reported
RML/RHB	2018	Government	A	(Gel)	18.3		NR	Storage	Activity not reported
Kentucky RML/RHB	2018	State Government	A	Liquid (Gel)	6.51	0.027	3H, 60Co, 242Pu, 239Pu, 241Am, 228Ra, 133Ba, 238U	Broker	Bionomics
<b>TOTAL</b>	<b>2018</b>	<b>State Gov.</b>			<b>24.81</b>	<b>0.027</b>			
			<b>SUM TOTAL</b>		<b>2158.79</b>	<b>435.9981</b>			

Kentucky LLRW Volumes (ft <sup>3</sup> )							
2018 – 2019							
	Actual	Actual	Actual	Actual			
Year	2013	2014	2015	2016	2017	2018	2019
Academic		8.3	0.5	328.69	203.72	42.18	
Fuel MGF (PGDP) DOE Facility		5,623	590.9	168.9			
State Governmental		60.5	14	43.1	45.3	24.81	
Industrial	91	463	220	6,246	3,189	2,068	
Medical	2	7.6	0.12	19.1	18.8	23.8	
Reactor							
<b>Total</b>	93	6,162	826	6,806	3,457	2,159	
<p>The above volumes include LLRW stored for decay and quantities shipped. Tabulation is derived from facility reports to the Kentucky RHB and Shipper reports. Volumes specified as "DOE Facility are the direct regulatory responsibility of the Department of Energy and the Nuclear Regulatory Commission.</p>							

**Kentucky TENORM Update:** In response to the dumping of oil and gas "fracking" wastewater sludges from West Virginia into two Kentucky landfills, new regulations were adopted in order to improve protection the public by oversight of TENORM associated with oil and gas operations. 902 KAR 100:180 became effective December 07, 2017. The regulation may be viewed at <https://apps.legislature.ky.gov/law/kar/TITLE902.HTM>

**Maxey Flats:** In November 2012, Maxey Flats Disposal Site was placed into the Final Closure Period which includes installation of a permanent vegetative cap, installation of permanent surface water control features, and installation of surface monuments to identify the location of buried waste. The Environmental Protection Agency (EPA) has declared the Final Closure Period complete and installation of the final landfill cap has been constructed. A 100-year institutional control period is in progress. The fourth Five-Year-Review of the remedy was

approved on September 28, 2017. Additional information may be found at <http://waste.ky.gov/SFB/Pages/MaxeyFlatsProject.aspx>.

**Paducah Gaseous Diffusion Plant:** The Paducah Gaseous Diffusion Plant was in operation from September 1952 to June 2013 and was operated historically for national defense purposes until 1964, after which it produced fuel-grade uranium used to generate electricity in nuclear reactors. The U.S. Environmental Protection Agency (EPA) declared it a Superfund site in 1988. All operations have ceased at the plant and deconstruction and remediation continue at the site. According to the DOE, Office of Environmental Management, the current end state completion baseline date for Paducah is 2030. Additional information may be obtained at; <http://waste.ky.gov/HWB/Pages/PaducahGaseousDiffusionPlant.aspx>.

## OBSERVATIONS AND CURRENT ACTIVITIES

- Participating member of the Low-Level Waste Forum. The LLW Forum's goals are to educate policy makers and the public about the management and disposal of low-level radioactive wastes, and to foster information sharing and the exchange of views between states and compacts. The Central Midwest Compact Commissioners participated at the October 3-4, 2019, Forum meeting in Richland, WA and the April 17-18, 2019 Forum meeting in Alexandria, VA.
- In addition to the LLW Forum activities, Commissioner Klinger Chaired the Disused Sources Working Group (DSWG) to develop recommendations for improving the management of disused sealed sources that pose a threat to national security. The Working Group, which is comprised of eight directors of the LLW Forum, solicited input from a broad range of stakeholders at 19 meetings over a 30-month period. A Summary of Findings and Recommendations can be found here: <http://www.disusedsources.org/recommendations-of-the-dswg/>

## AGREEMENTS AND PLANS

### *Interregional Facility Access Agreements*

Interregional Facility Access Agreements ensure that Illinois and Kentucky waste generators can continue to use the existing facilities outside the region to treat or temporarily store their waste.

On November 4, 1997, the Commission voted in favor of signing the National Interregional Access Agreement for Waste Management (October 23, 1992). To date this leaves only the Atlantic Compact, New Hampshire, Puerto Rico, and Rhode Island who have not signed the National Agreement. At a Regular Meeting in April 2006, the Commission voted not to renew previous agreements with other states and compacts (the Rocky Mountain, Southwestern, Northeast, Midwest and Southeast Compacts, the State of Michigan and the Commonwealth of Massachusetts) when these agreements expired in 2011. However, the Central Midwest Compact has an Interregional Agreement with the Atlantic Compact.

### *Regional Management Plan*

The Commission is required to adopt and amend, as appropriate, a plan for managing the region's low-level radioactive waste. The Regional Management Plan was adopted in 1988. In May of 1999 at a meeting held in Chicago, Illinois, the Commission unanimously voted to accept the revised 1999 Regional Management Plan. A copy of the plan is available through the Internet address (URL) <http://www.cmcompact.org> or by calling the Commission office at (217) 836-3018.

## COMMISSION ACTIVITIES

September 18, 2018 – Annual Meeting held in Frankfort, KY

April 9, 2019 - Spring Meeting held in Springfield, IL

Meeting Minutes are available here: <http://cmcompact.org/pubs/>

## AUDITS

The financial records of the Commission were audited in compliance with Article XI of the Commission's bylaws. The auditing firm of Robin L. Malloy, CPA performed an audit of the Commission's records finding that the financial statements accurately represent the Commission's financial position according to generally accepted accounting principles.

Central Midwest Interstate Low-Level  
Radioactive Waste Compact Commission  
**BALANCE SHEETS**  
June 30, 2019 and 2018

Statement 1

	<u>2019</u>	<u>2018</u>
<u>Assets</u>		
<b>CURRENT ASSETS</b>		
Cash and cash equivalents .....	\$ 6,912	\$ 11,796
Investments .....	2,416,436	2,401,908
Interest receivable .....	13,228	9,648
Prepaid expense .....	<u>1,356</u>	<u>-0-</u>
<b>TOTAL ASSETS.....</b>	<b><u>\$2,437,932</u></b>	<b><u>\$ 2,423,352</u></b>
<u>Liabilities and Fund Balance</u>		
<b>CURRENT LIABILITIES</b>		
Accounts payable.....	\$ -	\$ -
<b>FUND BALANCE.....</b>	<u>2,437,932</u>	<u>2,423,352</u>
<b>TOTAL LIABILITIES AND FUND BALANCE .....</b>	<b><u>\$ 2,437,932</u></b>	<b><u>\$ 2,423,352</u></b>

The accompanying notes are an integral part of these financial statements.

Central Midwest Interstate Low-Level  
Radioactive Waste Compact Commission  
**STATEMENTS OF REVENUE, EXPENDITURES AND  
CHANGES IN FUND BALANCE**  
For the Years Ended June 30, 2019 and 2018

Statement 2

	<u>2019</u>	<u>2018</u>
<b>REVENUE</b>		
Interest .....	\$ <u>40,138</u>	\$ <u>33,488</u>
<b>EXPENDITURES</b>		
Travel.....	2,030	167
Administrative expense .....	15,450	13,513
Professional fees .....	3,000	3,000
Insurance .....	2,153	3,502
Contractual services.....	<u>2,925</u>	<u>2,985</u>
Total expenditures .....	<u>25,558</u>	<u>23,167</u>
<b>EXCESS OF REVENUE OVER EXPENDITURES .....</b>	<b>14,580</b>	<b>10,321</b>
FUND BALANCE – BEGINNING .....	<u>2,423,352</u>	<u>2,413,031</u>
<b>FUND BALANCE – ENDING .....</b>	<b>\$ <u>2,437,932</u></b>	<b>\$ <u>2,423,352</u></b>

The accompanying notes are an integral part of these financial statements.



Central Midwest Interstate Low-Level  
Radioactive Waste Compact Commission  
**STATEMENTS OF CASH FLOWS**  
For the Years Ended June 30, 2019 and 2018

Statement 3

	<u>2019</u>	<u>2018</u>
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Excess (deficiency) of revenue over expenditures .....	\$ 14,580	\$ 10,321
Adjustments to reconcile excess of revenues over expenditures to cash flows from operating activities:		
Changes in operating assets and liabilities:		
Decrease (increase) in interest receivable .....	( 3,580)	( 3,609)
Decrease (increase) in prepaid expense .....	( <u>1,356</u> )	( <u>-0-</u> )
Net cash provided by (used for) operating activities .....	<u>9,644</u>	<u>6,712</u>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Investments matured .....	920,000	1,526,654
Investments purchased .....	( <u>934,528</u> )	( <u>1,533,506</u> )
Net cash provided by (used for) investing activities .....	( <u>14,528</u> )	( <u>6,852</u> )
<b>NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS .....</b>	<b>( 4,884)</b>	<b>( 140)</b>
CASH AND CASH EQUIVALENTS – BEGINNING .....	<u>11,796</u>	<u>11,936</u>
<b>CASH AND CASH EQUIVALENTS – ENDING .....</b>	<b><u>\$ 6,912</u></b>	<b><u>\$ 11,796</u></b>

The accompanying notes are an integral part of these financial statements.

**All minutes, notices, and other announcements of the Central Midwest Interstate Low-Level Radioactive Waste Commission are available at:**  
[www.cmcompact.org](http://www.cmcompact.org).