



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING



PHILLIP D. ROOS
DIRECTOR

VIA EMAIL

TO: Governor Gretchen Whitmer
Senate Energy and Environment Committee Members
Senate Natural Resources and Agriculture Committee Members
House Natural Resources, Environment, Tourism and Outdoor
Recreation Committee Members

FROM: Phillip D. Roos, Director 

DATE: October 4, 2024

SUBJECT: Report on the Low-Level Radioactive Waste 2023 Survey

In accordance with Section 18a of the Low-Level Radioactive Waste Authority Act, 1987 PA 204, as amended, following is the Department of Environment, Great Lakes, and Energy’s (EGLE) report on the Low-Level Radioactive Waste (LLRW) 2023 survey. Generators of LLRW are required to report annually to EGLE’s Low-Level Radioactive Waste Authority certain information on the volume, type, and activity generated by LLRW. This report summarizes the information submitted by generators for LLRW generated in the calendar year 2023.

Summary:

In the calendar year of 2023, 24 facilities reported the generation of waste requiring disposal in a licensed LLRW facility. Twenty-two facilities reported the disposal of waste off-site during 2023. The following tables summarize the waste generated and disposed of in 2023.

Table 1: Waste Generated and Disposed by Facility Type

Type of Facility	Number of Reporting Facilities in 2023 Generator (Disposer)	Volume of LLRW Generated in 2023 (ft ³)	Volume of LLRW Disposed in 2023 (ft ³)
Utility	3 (3)	42,196	31,273
Academic	7 (6)	948	956
Industry	10 (9)	1,323	1,826
Medical	3 (4)	21	63
Government	1 (0)	1	0
TOTAL	24 (22)	44,489	34,118

Table 2: Waste Generated by Waste Classification

Waste Class	Number of Reporting Generator Facilities in 2023	Volume of LLRW Generated in 2023 (ft³)
Class A	21	44,380
Class B	2	4
Class C	3	18
Do Not Know	2	87

All but one waste-reporting facility generated Class A waste. All Class B and Class C waste was generated by utility companies. The two generators of unknown waste Class were a government organization and a utility company. The Waste Class is not always known by the generator at the time of creation and must be identified prior to disposal.

LLRW is categorized by Classes A, B, and C in Title 10 of the Code of Federal Regulations, Part 61, Licensing Requirements for Land Disposal of Radioactive Waste, Subsection 61.55. The classification of LLRW is dependent upon the waste's isotopic composition and abundance, as well as the waste's chemical and physical stability. Class A waste is usually segregated from other waste classes at the disposal site. Class B waste is subjected to stricter requirements on waste packaging to ensure stability after disposal. Class C waste must not only meet more rigorous requirements on waste packaging to ensure stability, but also requires additional measures at the disposal facility to protect against inadvertent intrusion.

Waste Streams:

Survey respondents were asked to provide the volume and activity for the different types of wastes that were generated in 2023. Table 3 displays the volume and activity for the various waste types or "streams."

Table 3: Generated Volumes and Activities by Waste Stream

Waste Stream	Volume (ft ³)	Percent of Total Volume	Activity (millicuries)	Percent of Total Activity
Activated Equipment or Shielding	15	<0.1%	6,110,000	86.0%
Air Filter Media, Cartridges	4	<0.1%	<1	<0.1%
Animal Carcasses	112	0.3%	14	<0.1%
Aqueous Liquids	131	0.3%	12	<0.1%
Ash	0	0.0%	0	0.0%
Biological Waste (excludes carcasses)	359	0.8%	82	<0.1%
Contaminated Equipment	8	<0.1%	1	<0.1%
Contaminated Hazardous Material	90	0.2%	44	<0.1%
Dry Active Waste	40,221	90.4%	25,986	0.4%
Evaporator Concentrates	1	<0.1%	<1	<0.1%
Ion Exchange Resins	3,172	7.1%	218,580	3.1%
Liquid Filter Media, Cartridges	7	<0.1%	8,060	0.1%
Medical Generators	0	0.0%	0	0.0%
Oils	343	0.8%	582	<0.1%
Organic Liquids (not oils)	24	0.1%	43	<0.1%
Rubble, Sand, Soil, etc.	0	0.0%	0	0.0%
Sealed Sources	3	<0.1%	743,024	10.5%
Sludge	0	0.0%	0	0.0%
Total*	44,490		7,106,428	

*Total is different than shown in Tables 1 and 2 due to compounding rounding.

Historical Trends:

Figures 1 through 3 show the changes in disposal of LLRW over time.

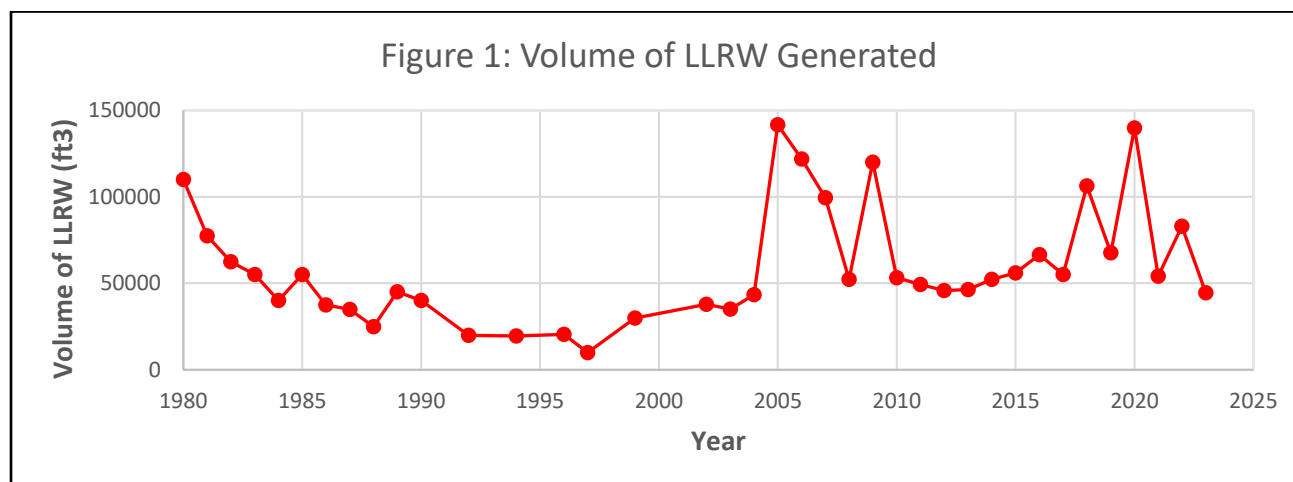
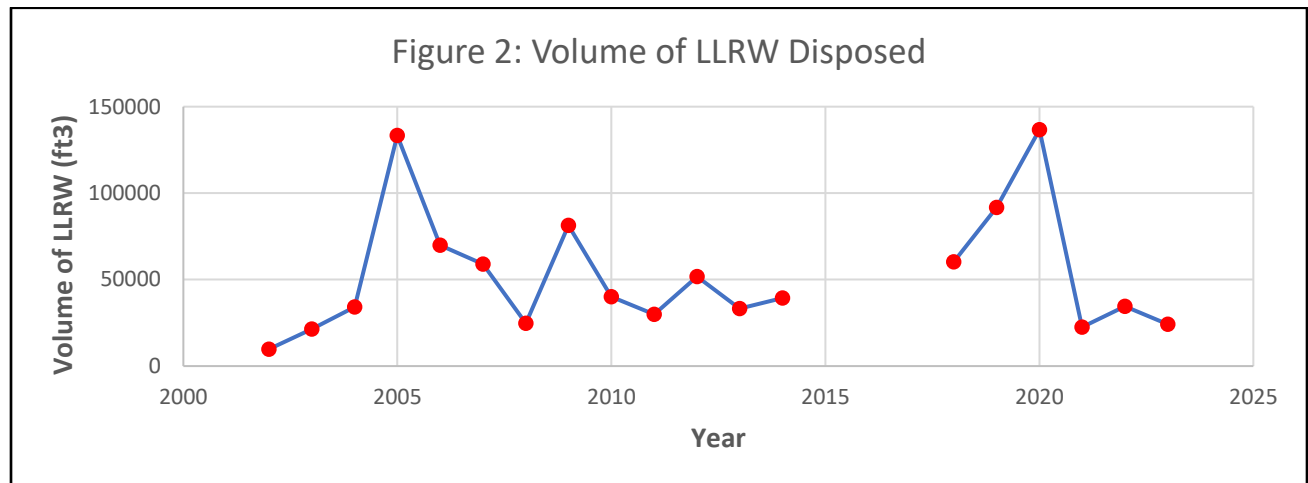
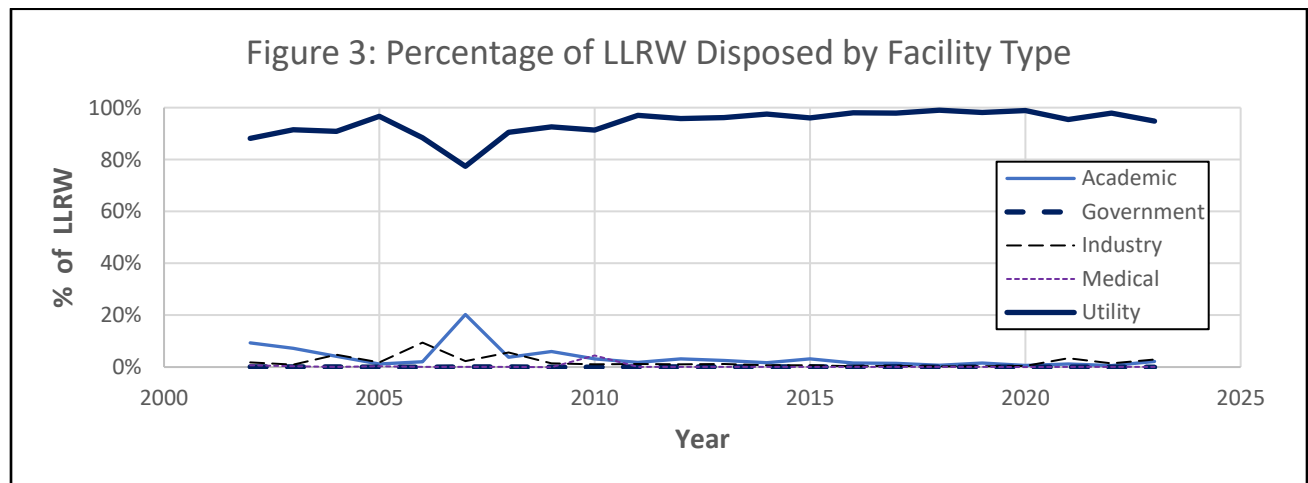


Figure 1 shows the annual volume of LLRW generated since 1980. The spikes in LLRW generation are from the decommissioning activities at Consumers Energy’s Big Rock Point Nuclear Power Plant from 2005 to 2007 and refurbishing the torus at DTE Energy’s Enrico Fermi Unit 1 Nuclear Generating Station in 2009. The primary generators of LLRW are utilities operating nuclear power plants.



As included in the previous year’s report, Figure 2 is included to demonstrate the trends and differences between waste volumes generated and disposed. Figure 2 displays the amount of LLRW that survey respondents have reported from 2002-2023. Disposal volumes were not surveyed for in 2015-2017.



As shown in Figure 3, utilities have accounted for greater than 90 percent of the volume generated in 19 of the last 22 years. Utilities accounted for approximately 95 percent of the volume of LLRW generated in 2023. The remainder is from facilities that routinely dispose of small amounts of waste and facilities needing a one-time disposal.

SUBJECT: Report on the Low-Level Radioactive Waste 2023 Survey

Page 5

October 4, 2024

If you need further information, please contact T.R. Wentworth II, Manager, Radiological Protection Section, Materials Management Division, at 517-915-8881; or you may contact me at 517-614-6873.

cc/att: JoAnne Huls, Chief of Staff, Governor's Office
Patti Tremblay, Director of Legislative Affairs, Governor's Office
Zoe Ahlstrom, Interim Policy Director, Governor's Office
Aaron B. Keatley, Chief Deputy Director, EGLE
Travis Boeskool, Deputy Director, EGLE
Sydney Hart, Legislative Liaison, EGLE
Dale Shaw, EGLE
Elizabeth M. Browne, EGLE
Tracy Kecskemeti, EGLE
Julie Staveland, EGLE
T.R. Wentworth II, EGLE

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800--662--9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

This document and its contents are subject to the Freedom of Information Act and may be released to the public.