

Radioactive Waste



Radioactive waste is produced as a result of nuclear science and technology activities.

AECL's Inventory of Radioactive Waste

Radioactive waste is a by-product of nuclear science and technology. AECL's inventory includes waste created by nuclear fuel fabrication, nuclear reactor development, medical radioisotope development and production, and other activities. It also includes contaminated soil and debris from the decommissioning of obsolete structures at our sites.

AECL's mandate includes the ongoing management of radioactive waste in a manner that is safe and environmentally responsible. It also includes the cleanup of waste generated by other entities for which the Government of Canada assigned responsibility to AECL in 2015.

AECL's waste inventory (December 31, 2019)

- Low-level waste includes items such as mop heads, cloths, gloves and other protective clothing that may have been contaminated while being used in the workplace. Over 98% of the nuclear waste in Canada by volume is low-level waste.
- Intermediate-level waste includes items that have had more direct contact with radioactive substances such as ion-exchange resins and reactor components.
- High-level waste is used fuel. It is generated at nuclear power plants and is highly radioactive.

High-Level Radioactive Waste Inventory, 2019

Site	Number of fuel bundles	Estimated volume (m ³)	Mass of uranium (kg)
Douglas Point	22,256	89	299,827
Gentilly-1	3,213	13	67,596
National Research Universal Reactor	804	3	2,646
Waste Management Area B	9,334	120	22,646
Waste Management Area G	4,886	20	65,395 *
Whiteshell Laboratories	2,290	29	21,540 *
TOTAL HLW	42,783	274	479,650

* This figure has been edited to correct a transposition error in the original post

Intermediate-Level Radioactive Waste Inventory, 2019

Site	Operations (m ³)	Decommissioning (m ³)	Total (m ³)
Chalk River Labs	1,050	332	1,382

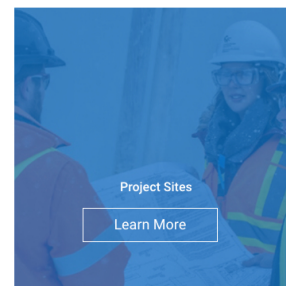
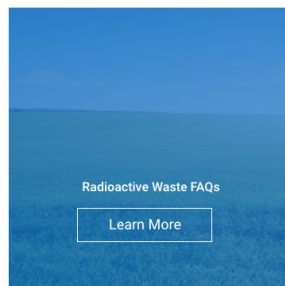
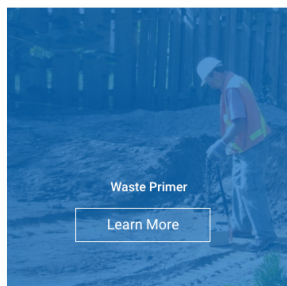
Douglas Point	-	6	6
Nuclear Power Demonstration Reactor	-	389	389
Whiteshell Laboratories	-	240	240
TOTAL ILW	1,050	967	2,017

Low-Level Radioactive Waste Inventory, 2019

Site	Decommissioning Waste (m ³)	Decommissioning Contaminated Soil (m ³)	Operations Waste (m ³)	Operations Contaminated Soil (m ³)	Total (m ³)
Chalk River Labs	12,692	4,202	136,582	156,276	309,752
Douglas Point	92	-	-	-	92
Gentilly-1	161	-	-	-	161
Nuclear Power Demonstration Reactor	2,289	-	-	-	2,289
Whiteshell Laboratories	16,861	-	-	-	16,861
TOTAL LLW	32,095	4,202	136,582	156,276	329,155

Historic Low-level Radioactive Waste, 2019

Site	Total (m ³)
Port Hope (PHAI)	720,000
Welcome (PHAI)	550,000
Port Granby (PHAI)	765,622
Greater Toronto Area	4,900
TOTAL	2,040,522



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