

TREATMENT AND STORAGE OF RADIOACTIVE WASTE

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Keywords: radioactive waste; treatment; conditioning, sealed source; lightning rod; smoke detector.

The radioactive wastes received and treated at Radioactive Waste Management Laboratory can be classified basically in the following categories: compressible solids, non-compressible solids, liquid wastes, disused sealed sources, lightning rods and smoke detectors. Compressible solids are conditioned into 200 L drums; a 10 ton bailing press is used to reduce the volume of compressible wastes by a factor of 5 (FIG.1). Most non-compressible solids fits into 200 L drums; larger pieces are packaged in 1,6 m³ metal boxes. At the present, aqueous and organic liquid wastes, as well ion exchange resins and activated charcoal arising from the research reactor water treatment system, are under interim storage; the unit designed for immobilization of these wastes in a cement matrix is expected to become operational by the end of 2005. Disused sealed sources are stored awaiting treatment; a hot cell is under construction for repackaging these sources in final disposal containers. Lightning rods are being disassembled in an alpha-tight glove-box and the extracted Am-241 sources are stored awaiting final disposal as sealed sources; the remaining metal parts will be decontaminated and discharged as metal scrap. Americium sources attached to smoke detectors discarded as radioactive waste are being removed and stored as sealed sources; the remaining parts are monitored and discharged as non-radioactive scrap. Biological wastes, mainly animal carcasses, are been treated by the addition of desiccants and stored for radioactive decay. Raw and treated wastes are stored separately in two storage shelters, each comprising an area of 200 m².



FIGURE 1 - In-drum compactor

The following table summarizes the quantity of wastes received in the 2002 2004 period and the inventory of wastes presently under storage at the Radioactive Waste Management Laboratory.

TABLE 1 - wastes received in the 2002 2004 period and the inventory of wastes presently under storage

Type of waste	Quantity received			Total inventory
	2002	2003	2004	
Non-compressible solids	10 m ³	6 m ³	4 m ³	135 m ³
Liquid wastes	0,05 m ³	2 m ³	-	3 m ³
Disused sealed sources	540	250	270	9200
Lightning rods	560	600	800	14500
Smoke detectors	920	2320	2000	19300