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**Horia Hulubei National Institute for
R&D in Physics and Nuclear
Engineering**

*Package for storage of alpha active
radioactive waste (CSM-SS-ALFA)
Patent no. RO126351/08.12.2010*

Abstract

The invention relates to a package for safe storage of solid alpha active radioactive waste, mainly disused radioactive sources, developed for their safe storage for a period of at least 50 years.

The package according to the invention has in composition a biological protection made of concrete, in which are practiced some vertical channels of various sizes, lined by tubes made of polyethylene, one central and six radially disposed. On these channels are guided capsules with radioactive waste and in them are embedded some studs. The biological protection being designed to reduce/mitigate the gamma radiation emitted by radionuclides, along with a cover made of concrete or lead, fastened and assured by the biological protection by bolts. Each capsule is made of a metal tube, made preferably of stainless steel, on which are fixed by welding in inert gas, some metal lids, made of same material as the tube. By the upper metal cover is attached a handling device.

Technology stage

The product was realised at pilot scale, tested according to specific legislation and requests and licensed by the Romanian regulatory body.



Applications

- Management of disused alpha active radioactive sources from medicine, industry, education, research, agriculture, other domains where used radioactive sources are; the proper management of these types of radioactive sources leads to enhanced protection of the operational staff, environment and population.

Advantages

- Solve the technical and radiological safety demands related to relative long term storage of the alpha active radioactive waste, for which disposal alternative is not available;
- Assure the proper traceability and monitoring of the alpha sources kept in long term storage;
- Assure the proper physical protection of the alpha sources kept in long term storage.

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