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„Demo” program in Püspökszilágy, Hungary: Qualification of low and intermediate level radioactive wastes by a field & gamma; spectroscopy system

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The Radioactive Waste Treatment and Disposal Facility, Püspökszilágy, Hungary is in operation since 1976. Low and intermediate level radioactive wastes originating from different industrial, medical, educational and scientific areas are treated here. At the beginning of its operation the facility had to fulfil only safety requirements but not regulations pertaining to the form and the quality of the wastes. The recent safety analyses aim to improve these temporary solutions to ensure the further safe and proper operation of the facility. A “Demo” project was launched to remove the wastes containing long lived and high activity isotopes and to gain excess capacity with more organised backfilling, in the framework of which the exhumation of 4 pieces of near-surface reinforced concrete vaults (called “A type”) was fulfilled. In the vaults the wastes were in plastic packages. Most of them were unhurt during hoisting, thus the identification of the various isotopes was possible with the help of a field gamma spectrometry system. A Genie 2000 Gamma Analysis Software was used together with a Big Mac type CANBERRA gamma spectrometry system with a high purity germanium detector. On the basis of the original records most of the wastes containing different isotopes were identified and the results of the measurements were similar to the ones estimated from the records. After the backfilling it can be seen that the purposes regarding the excess capacity of the vaults can also be achieved. It can be stated that the measurement technique for the further similar vault exhumation procedures is proper and applicable.

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