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Title

Quantifying Isotope Activities Using a Gamma Spectrometer Survey Meter

Abstract

During the operation of high energy accelerators activated materials are commonly created. The activity and isotopes present in these materials must be characterised for their clearance and release from the facility, or to ascertain their duration of stay in a radiological storage area. An activity estimate method using a gamma spectrum collecting survey meter is presented. Using several reference radioactive sources the detection efficiency and dead time of the survey meter were characterised. This information combined with the physical properties of the survey meter, the counting time and the properties of the measured photon energy emissions can be used to calculate an accurate activity estimate for localized activation on accelerator components, or loose contamination on isolated waste materials