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# Method for Applying Measurement Restrictions to a High-Purity Germanium Detector Within the Framework of On-Site Inspections

The purpose of high-resolution gamma-ray spectrometry during an on-site inspection (OSI) is to determine the presence or absence of radionuclides which indicate the occurrence of a nuclear explosion. High resolution gamma-ray measurements are usually performed using a high-purity germanium detector in the field (in-situ) or in the laboratory to samples taken in the inspected area. The comprehensive test ban treaty allows for measurement restrictions for high resolution gamma spectrometry within the framework of managed access (par. 89, Part II, CTBT protocol). The term "measurement restrictions" refers to technological methods which filter out any radionuclide data which is not treaty-relevant (CTBT/WGB/TL-4/42, 2012). We propose a method for measurement restriction based on hardware and software which can be applied to any high resolution germanium detector (stationary and mobile based systems). The basic principle of the proposed method includes deletion of parts of the measured spectrum, which in turn, can be analyzed by the inspectors in standard gamma-ray methods. In recent years, a feasibility study for the proposed method was carried out, including external tests by gamma analysts. We will present the method and the results of the feasibility study, as well as an initial model system for measurement restriction.

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