



ISIN, patented method for immediately detecting radioactive contamination.

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contamination.

It will be used throughout the REMRAD monitoring network

Allow real-time identification of potential radioactive contaminants in the air, also due to possible nuclear accidents outside our country. This is the result of the research, which obtained the patent for industrial invention, carried out within ISIN by Dr. Massimo Altavilla, Head of the Radiological Risk Area with technical coordination of the activities under the responsibility of the Radioprotection Service, radioactive sources, environmental radioactivity control, radiometric laboratories.

With the methodology patented by the Inspectorate, it is also possible to continuously measure and determine the concentration of radioactivity in the air, on a large filter, at predefined time intervals, by a scintillation detector, allowing to have a practically immediate response to potential radioactive contamination present in the air for certain radionuclides; the specificity of the "early alert" system makes it possible to identify potential contamination in the air, also due to possible nuclear accidents outside the Italian borders.

The new system will be installed in the ISIN Remrad stations, currently being updated, which aim to control the radioactive contamination of atmospheric particulates in strategic areas of the Italian borders. There are 6 Remrad stations planned on Italian territory, of which 2 are already functioning, one in northern Italy and one in the south. This update involves the replacement of the old monitoring stations with a new version with very high sensitivity, much superior to the previous ones.

The station is made up of two measurement systems: continuous and in "delayed" mode. Both monitoring methods work automatically and complementarily, guaranteeing the detection and presence of minimal radiological anomalies in the event of the passage of any radioactive clouds over the national territory. This measurement sensitivity allows the Inspectorate to intervene even if the anomalous values detected do not present an immediate risk to health but nevertheless require appropriate considerations for correct information to the population.

Furthermore, these new Remrad stations largely share similar characteristics to those possessed by the monitoring stations of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), integrating, in this sense, the international monitoring of radioactivity and significantly improving the continuous monitoring capabilities with sensitivity levels that reach tens of mBq/m³ in the case of continuous mode and tens of µBq/m³ in the case of "delayed" mode.

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