

A Standardized and Accurate Sampling Device for On-Site Inspection and Verification Purposes after a Nuclear Incident

On-site inspections are an integral part of the characterisation and verification of potential nuclear testing events; these involve environmental sampling for off-site analytical determination which may provide evidences of atypical presence and/or amount of radionuclides. As fresh radioactive fallouts are concentrated in the first millimetres of the soil, any anomaly of the topsoil depth distribution and content of radionuclides can provide information about potential past events which could have been unnoticed. The Fine Increment Soil Collector (FISC), created by the SWMCN Laboratory of the Joint FAO/IAEA Division, was originally developed to facilitate the precise determination of soil depth distribution of anthropogenic and naturally occurring radionuclides for use in soil degradation investigations. Because of its characteristics and modus operandi, the FISC facilitates standardized on-site sampling and collection of high resolution (millimetres precision) topsoil samples. The FISC straightforward setup and operation makes it a practical on-site sampling device which may be helpful during on-site inspections. One of the main benefits includes the accurate determination of radionuclide depth distribution which could highlight potential unnoticeable past events that may not have been recorded or covered by the International Monitoring System.

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