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protection in On-Site Inspections (OSI)

A nuclear weapon explosion emitted radioactive contamination into the environment. The Comprehensive Nuclear-Test-Ban Treaty (CTBTO) in paragraph 69 of the protocol on “Inspection Activities and Techniques” refers to the tests that must be collected as evidence to prove the origin of the explosion. These samples are collected in a radiologically contaminated area with a risk to inspectors’ health. To work in radiologically contaminated areas requires radiological protection measures to reduce the inspectors’ dose received due to ionizing radiation. The potential risks for inspectors are external irradiation and external and internal contamination. External irradiation due to radioactive sources that are outside, to reduce it, tools such as distance, time and shielding are used. The measurement of the dose received is performed through dosimeters. Internal contamination is due to the incorporation of radioactive substances into the body through inhalation, ingestion, or wounds. The most appropriate method to avoid contamination is to use Personal Protective Equipment (PPE). Individual monitoring of internal contamination is controlled by in vivo measurements with body radioactivity counters and in vitro urine analysis. To have knowledge and training in the use of these tools and following procedures step by step helps to reduce risks in on-site inspection activities.

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