



## SPECIFICATION

### Handheld Surface Contamination Monitor

#### 1. Scope

- 1.1. This specification describes the equipment requirements for a handheld surface contamination monitor, hereinafter called "The Monitor."
- 1.2. The scope of supply covers the delivery of Monitor and subsequent support services for the staff of the State Nuclear Power Safety Inspectorate (VATESI), hereinafter called "End-User."
- 1.3. The Monitor shall be used for the assessment of radioactive contamination of surfaces in the controlled area of nuclear installations to make sure that requirements for the cleanliness of the premises and for the prevention of spreading and control of radioactive contamination are fulfilled. The equipment is also intended to be used for the random contamination checks in some stages of radioactive waste management activities (such as surface contamination measurements of the package or container during transport or internal transfer), to make sure that appropriate requirements are implemented.
- 1.4. The purchase is to be implemented under the Technical Cooperation project LIT9018 "Enhancing the Effectiveness and Transparency of the Radioactive Waste Management Monitor".

#### 2. Requirements

##### 2.1. General Requirements

The Monitor shall meet the following general requirements:

- 2.1.1. Be suitable for direct surface contamination measurement by measuring surface activity concentration and indirect surface contamination measurement by measuring total activity of the sample (smear test);
- 2.1.2. Be suitable for activity measurement of the alpha and beta emitting radionuclides;
- 2.1.3. Have a scintillation type radiation detector to ensure easy maintenance of the equipment;
- 2.1.4. Display measured values of activity in the SI unit becquerel (Bq) or in counts per second (cps) in case of total activity of the sample or the surface and measured values of surface activity concentration shall be in becquerel per square centimeter (Bq/cm<sup>2</sup>);
- 2.1.5. Be suitable for measurements of low activity and low activity concentration (such as 0.2 Bq/cm<sup>2</sup> for alpha emitting radionuclides and 2 Bq/cm<sup>2</sup> for beta emitting radionuclides);
- 2.1.6. Have an acoustic alarm with adjustable alarm thresholds
- 2.1.7. Have internal memory to store the values of carried out measurements.

##### 2.2. Technical Requirements

The Monitor shall meet the following technical requirements:



- 2.2.1. Have the ability to transfer data to computer, including all needed supplementary equipment;
- 2.2.2. Have a power unit with interchangeable rechargeable batteries (C type, AA or similar), including charging device;
- 2.2.3. Have a suitable transportation case.

### 3. Marking

The Monitor shall have all safety markings in English language.

### 4. Packing

The Monitor, for the shipment by air to the End-User, shall be packed in accordance with international standards that are applicable for the shipment by air of this kind of equipment.

### 5. Quality Requirements

- 5.1. The Monitor shall be manufactured in accordance with the Contractor's ISO quality assurance system or an equivalent quality assurance system.
- 5.2. The Contractor shall document the compliance with this quality assurance system.

### 6. Testing and Acceptance

- 6.1. The Monitor, prior to shipment, shall be tested for conformance with manufacturer's performance specifications and the minimum requirements specified herein.
- 6.2. The results of the testing of the Monitor shall be documented by the Contractor and provided to the End-User.

### 7. Installation and Training

Installation of the Monitor and special training is not needed. However, the Contractor shall provide contacts for clarification of possible specific questions related to the use of the Monitor.

### 8. Deliverable Data Items

The Contractor shall provide the operation and servicing manual in English, both in hard and electronic form.