

Case Study RaySafe 452

RADSCA uses 452 for a variety of radiation safety services

Results

- Time savings with just one device for dose and count measurements
- Efficient radiation leakage detection with accurate measurements across all energies (flat energy response)
- Measurements in a variety of medical and industrial applications

Medical Applications

- X-ray tube and wall leakage in radiography, CT, fluoroscopy, and mammography
- Contamination measurements and patient discharge measurements in medicine

Industrial Applications

- Non-destructive Testing (NDT)
- Petroleum Industry
- Metal & Mining
- Food & Beverage
- Water & Wastewater
- X-ray Gates (truck scanning, border control)

Customer

Salih Şimşek is the founder of Radiation Safety Consulting Agency (RADSCA).

It is a privately owned, independent Turkish company focused on radiation safety measurements within medical and industrial applications. This involves dose, dose rate and count measurements, and activity calculations for radioactive sources, and other safety related services.

As a consultant, Salih works very closely together with Safety Officers at different facilities.



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Having a flat energy response is a game changer. This is very important to accurately evaluate leakage in a radiation field.”

Salih Şimşek, Radiation Safety Expert,
RADSCA

Challenge

X-ray and radioactive sources are widely used in different industrial and medical applications. Radiation field and leakage measurements are required to help ensure a safe work environment.

Avoiding unnecessary radiation is important, both for his team during measurements, and also for staff working close to the emitting source, all in accordance with ALARA.

Different applications require different measurement setups, and previously also different types of measurement devices due to the wide energy range.

Solution

Salih and his team prefer using the RaySafe 452 since it covers all measurement needs in one device, air kerma (tube leakage), ambient dose (wall leakage), and counts. The flat response across a wide range of energies makes it suitable for most types of medical and industrial applications.

In healthcare applications, he uses RaySafe 452 for X-ray tube and wall leakage tests and to measure scattered radiation. He also performs measurements within nuclear medicine.

In addition, the 452 is used to measure X-ray levels around truck screening stations, and in non-destructive testing applications within production.

Another common measurement situation is when a gauge is used for level and density measurements in storage tanks. Such devices are used in petrochemical, metal & mining, and food & beverage industries. The radioactive source, Cesium 137 or Cobalt 60, is enclosed in a protective container.

Nuclear gauging is a highly regulated business. At commissioning, radiation survey and leakage tests are required. Thereafter leakage tests are performed on a regular basis, typically every 36 months, or whenever there is an incident or other safety concern.

During a radiation survey, radiation levels in all directions around the source container and the detector are measured to identify any unusual radiation pattern, requiring shielding or other protective measures.

A leakage test can be carried out via a wet wipe test to make sure no radioactive material above the regulatory limit is present on the surface of the container.

Based on his measurements, Salih calculates activity, and performs other calculations which he uses to determine shielding requirements and radiation safety distances. Salih also supplies shielding devices in order to be a one-stop-shop for radiation safety services.

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The RaySafe 452 covers all measurement needs in one device”

Salih Şimşek, Radiation Safety Expert, RADSCA



Top: The RaySafe 452 is a multi-purpose survey meter which comes in three scalable models for measurement of ambient dose equivalent (yellow lid), air kerma (grey lid), or both of these plus counts (without lid). It provides accurate measurements across a broad range of energies.

Bottom Left: RaySafe 452 used for leakage measurements around nuclear gauges in a refinery. Bottom Right: RaySafe 452 used for wall leakage measurements in a CT facility.



RaySafe

We empower our everyday heroes to focus only on protecting lives.

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04/2024 22700a-en

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