

The most efficient way to analyze legacy waste, reduce costs and risk for the environment.

Challenge

Due to the hazard it poses, radioactive waste must be properly characterized and conditioned for ultimate disposal in the final repository. The risk posed by the waste is the potential biological damage caused by the ionizing radiation emitted by the radionuclides, as well as the chemical toxicity (material content) of i.e. water-polluting substances contained in the waste. To date, a material characterization review of (legacy) radioactive waste for ultimate disposal usually involves opening of the packages. That opening for visual inspection or sampling is a complex and costly process that includes dose exposure and environmental risks, leads to additional nuclear transports and secondary waste and at the end an extra repackaging effort.

Solution

Quantom provides an unique and automated measurement system based on a non-destructive analysis method using the prompt and delayed gamma neutron activation analysis (P&DGNAA) for material characterization.

This innovative waste package inspection system enables the waste producers to verify or, if necessary, complete the material description of the radioactive waste.

A random or full-scope Quantom-inspection of waste packages allows the plausibility checking of the declared substances for the inspection lot. This unique possibility of analyzing waste drums non-destructively and without repackaging greatly reduces the radiation exposure of the operating personnel and avoids increasing the volume of waste. On top, QUANTOM will be developed as a mobile system integrated into a 25-ft.-container. That means, QUANTOM can be used directly at the waste storage or at conditioning sites and no extra transportation of packages or samples are necessary.

At first Quantom is designed to analyze 200l-drum waste packages.



Overview of the QUANTOM® machine

Technical information

- Measuring by using the prompt and delayed gamma neutron activation analysis (P&DGNAA)
- Mobile Unit
- Transportable in a 25-ft.-container
- High shielding:
Minimize dose rate (<10 µSv/h)
Reduced licensing efforts during measurement campaign
- Equipped with handling crane assembly

Customer benefits

- Avoid opening of waste packages
- Accelerate the process of material characterization
- Minimize staff dose
- Reduce the number of radioactive transports
- Avoid re-packaging and new conditioning of legacy waste

**Your performance
is our everyday commitment**

Key figures

2-4 hours for one drum

> 50 % Cost Saving

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