DISPIM® being configured for glovebox measurements

DISPIM® Modular Plutonium Monitor

Cavendish Nuclear's DISPIM® is a modular, mobile, re-configurable neutron assay system with the flexibility to measure the plutonium content of a wide range of object sizes and shapes including, but not limited to, gloveboxes, crates and drums, determining both the mass and distribution of plutonium within the object.

DISPIM® consists of a number of identical, interchangeable neutron counting modules that can be deployed in a variety of configurations.

The standard configuration comprises an assembly of four detector modules mounted horizontally within a background shield that in turn, attaches to a mobile pump truck.

The detector modules can be easily extracted from the assembly and either deployed in free space or upon alternative deployment mechanisms.

Each module contains two ^{3}He neutron detector tubes with up to a total of 24 modules being used in a full system deployment.

An optional HRGS system may be deployed to determine the plutonium isotopic composition.

The neutron signal data is collected and processed using our patented neutron counting technology based upon the time stamping of pulses from the neutron detectors, permitting high speed processing of signals and improved measurement performance.

Flexible system software allows both total neutron counting and neutron coincidence counting analysis methods to be applied to the data stream.

Each DISPIM® system is pre-calibrated with neutron detection efficiency mapping performed at Cavendish Nuclear's premises prior to shipping. Alternatively, calibration can be performed in-situ using sealed neutron sources.

The data acquisition and data processing computers can be situated away from the detector modules, enabling the DISPIM® to be operated remotely.

The system has full maintenance and diagnostic facilities with password protected access. Data is output to both screen and printer.

DISPIM® is offered as a system for direct purchase or as a service operated by trained and qualified Cavendish Nuclear personnel. We supply systems configured to meet a customer's individual requirements and provide installation, testing, staff training and maintenance support over the full operational lifetime of the system.

Cavendish Nuclear has over 20 years of experience in the development, supply and operation of DISPIM® systems as a measurement service. These systems have been successfully used in decommissioning and other projects throughout Europe and North America.

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DISPIM® detector assembly comprising 4 modules

For decommissioning applications, the DISPIM® system has proved to be an essential tool in the planning and safe execution of alpha plant decommissioning projects, determining the Pu-240 equivalent mass or the total Pu mass, depending upon whether the plutonium isotopic composition is known or has been measured using the optional HRGS system.

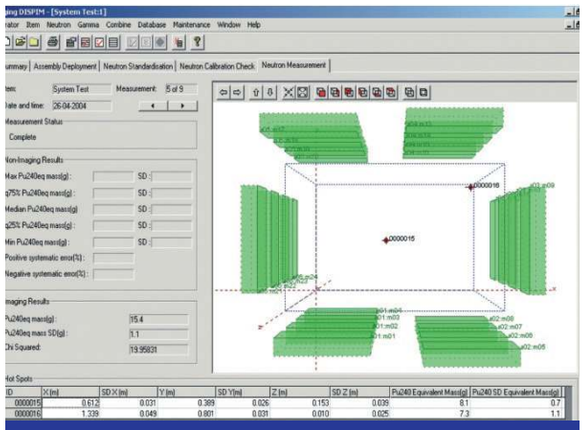
The DISPIM® can also determine the location of the plutonium within the glovebox or item, allowing the early removal of plutonium concentrations to reduce operator dose and support criticality control before and during decommissioning operations.

Additionally, DISPIM® measurements can be performed on both crated and drummed wastes.

DISPIM® systems are available to measure:

- ☑ Gloveboxes
- ☑ Drums
- ☑ Crates
- ☑ Packets
- ☑ Filters
- ☑ Process vessels
- ☑ Vehicles
- ☑ Shipping containers
- ☑ Parcels

DISPIM® detector assemblies configured around a glovebox



DISPIM® user interface showing detector modules around measurement item

Summary

- The ultimate tool for decommissioning, waste management and security applications
- Unique, modular, mobile design for the in-situ assay of a wide range of object sizes and shapes
- Calculates both plutonium mass and distribution
- Determines information for use in pre-commencement safety cases
- Permits operator dose reduction through early removal of Pu concentrations
- Rugged and reliable design
- State of the art neutron counting technology
- Direct purchase or contract service options

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