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NUCLEAR POWER PLANTS | WASTE MANAGEMENT | RESEARCH CENTRES | INDUSTRY & MANUFACTURING

PIM-310

PARTICULATE AND IODINE MONITOR

MAIN ADVANTAGES

- Continuous monitoring of radioactive particulates and iodine
- Optionally, it can be delivered in a version for the emergency and post-accident monitoring or after a seismic event
- Control of flow through the monitor from a host system
- Quiet operation
- Local control and display of the measured values and monitor status
- Remote control and display

PURPOSE

PIM-310 is designed for continuous measurement of volumetric activities of radioactive particulates and iodine in the air during normal operation, and optionally also during accident and post-accident operation.

The purpose of the monitor is to detect a wide range of concentrations of radioactive particulates and iodine in the sampled air from low levels, and to indicate their presence to personnel in the monitored area in order to protect them from internal contamination.

The measuring part consists of the following basic parts:

- CPD-14 Continuous Particulate Detector
- CID-03 Continuous Iodine Detector
- VP-50 Pump
- GFM-10 Gas Flow Meter
- RPU-12 Processing Unit

The monitor samples air through the inlet pipe. The sampled air first passes through the CPD-14 particulate detector, where the aerosols are trapped on a moving filter tape. Subsequently, the air passes through the CID-03 iodine detector, which captures radioactive iodine in an iodine cartridge. The constant flow of air through the two monitors ensures a VP-50 pump.

Flow values, measured aerosol and iodine activities, and monitor status are displayed by the RPU-12 processing unit. This also calculates the volumetric activity and provides data transfer to the host system. The RPU-12 automatically archives the measured values into the local archive.

Automated auto-diagnostic features are implemented in the monitor.

CPD-14 Continuous Particulate Detector

PIM-310

PARTICULATE AND IODINE MONITOR

TYPICAL RADIOMETRIC PARAMETERS

Detector	CPD-14	CID-03
Measuring range [Bq/m^3]		
α (^{241}Am)	5E-02 to 3.9E+05	
β (^{36}Cl)	5E-01 to 5E+05	
γ (^{131}I)		2,50E+00 to 3,00E+06
Capture efficiency	90 %	96 %

SPECIFICATION

Detector	
CPD-14	semiconductor
CID-03	scintillator NaI(Tl)
Filter	
CPD-14	moving filter tape LSF-2
CID-03	iodine cartridge TC-45
Seismic resistance	1a
Dimensions (W × H × D)	
monitor	(1700 × 2200 × 600) mm
base	(1700 × 500 × 480) mm
Weight	1000 kg
Interface	Ethernet
Temperature range	5 to 40 °C
Temperature of measured air	0 to 40 °C
Working air flow	1,8 m^3/hr

MODELS

Basic version for standard operation

Design optimized for accident and post-accident operation

CID-03 Continuous Iodine Detector

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