

Criticality Accident Alarm System SRKS-01D



Criticality Accident Alarm System for detection and recording of a criticality accident. Allows automatic collection, processing, storage and display of measurement data and related information as visual and graphical representation for operators of nuclear safety service.



Reference standards

IEC 60860
ANSI/ANS-8.3-1997
ISO 7753

Purpose:

- detection and recording of a criticality accident(CA) by measuring the absorbed dose rate (ADR) of gamma-neutron radiation in the premises of monitored object, its comparison with a threshold value and generation of audible and visual signals;
- automatic collection, processing, storage and display of measurement data and related information as visual and graphical representation for operators of nuclear safety service.

Functions of the system:

- detection and recording of CA events by continuous measurement of ADR of gamma radiation, comparison of measured values with preset thresholds, generation of signals to activate the alarm;
- activation of audible / visual alarm;
- in the event of CA: turning on warning signals "DO NOT ENTER!" at illuminated information panels placed at the entrances to the controlled area;

Composition:

- lower level:
 - control unit with power supply;
 - detection units BR-04D;
 - audible alarm units BZS-01D;
 - visual alarm units BSS-01D;
 - illuminated warning signs SIT-01D;
 - panels for muting audible alarm PBZ.
- additional lower layer devices:
 - dosimeters of gamma radiation DBG-S11D.



Block diagram of the system

- upper layer:
 - central display panel CDP;
 - cabinet with upper layer computer equipment.

Features:

- data can be transferred to external data communication channel using RS-485 interface ([DiBus data exchange protocol](#));
- automatic self-testing of recording units BR-04D with display of information about the type of fault;
- possibility for connecting additional recording and signalling units and devices;
- ability to function in general, regardless of the functioning of components, within the agreed scope of nuclear safety tasks;
- radiation hardness up to 10 Gy.

Features of upper layer software:

- collection of information via RS-485 network, displaying it on the monitor, transmission to remote users, archiving and storage.
- status monitoring and display of values measured by BR-04D and DBG-S11D in locations as per layout of premises;
- access to archived data with possibility to generate reports for periods determined by operator;
- maintenance and archiving of a log of dosimetric measurements data and events along with their time stamps;
- possibility to transfer data to external users via Ethernet network for integrating of CA into higher level systems.