

Electronic Personal Dosimetry System SEOD



The SEOD system is designed for operative monitoring and assessing personal doses of persons moving in the controlled areas by means of electronic personal dosimeters, and it allows the direct signalization of an exceeded pre-set alarm level.

Purpose

The SEOD system is designed for the everyday operative assessment of the received personal doses of workers in controlled areas (CA), especially in nuclear power plants.

The SEOD system uses directly readable electronic personal dosimeters by various manufacturers for the operative monitoring of workers' doses; it is possible to combine multiple dosimeter models by multiple manufacturers in a single workplace.

In the case that the given workplace also uses integral personal dosimeters (e.g., OSL, TLD), SEOD allows the archiving and assessment of the workers' doses measured by means of both types of dosimeters in accordance with the valid legislation. The integral dosimeters are distributed among the workers in the CA by means of a designated Dispenser of Personal Dosimeters (DPD), which ensures that only that worker assigned to a dosimeter actually receives it.

The SEOD system further consists of Electronic Dosimetry Terminals (TED), administrator stations and an SEOD system database server, which are interconnected by means of a local Ethernet-type computer network. All SEOD system elements use the standard TCP/IP protocol for communication.

The system runs on a server with an ORACLE database that archives all SEOD system data. Administrator stations have application software modules installed that enable work with the SEOD system to supervise personnel (dosimetry specialists).

It is also possible to integrate personal contamination monitors of various types into the SEOD systems (whole-body, portal, hand-foot) and, therefore, record workers' passage through these monitors and their contamination upon their exit from the controlled area or nuclear power plant premises.

Main Advantages

- Application of various models of electronic personal dosimeters by various manufacturers
- Application of many types of ID cards/chips for personal identification
- The SEOD system accumulates received doses of Hp(10), Hp(0.07) and Hp(10) neutrons automatically in various time intervals (day, month, year and five years) for each person
- The SEOD system allows the replacement of electronic dosimetry doses with doses from a legal dosimetry service
- In the case that limits are exceeded, the system will automatically deny the worker entrance into the controlled area
- The SEOD system automatically accumulates the doses received by each person, working activity, facility, building or radiation work permit
- The possibility of personnel localization and monitoring of their movements
- The system allows data export into files of various file types
- The system can be connected to other information systems within the given location by means of SQL and TCP/IP
- TED terminals can be equipped with back-up power supply sources (UPS)
- The SEOD system permits the connection of personal contamination monitors and records workers' movements, including the level of their contamination and connects them with their time in the CA and work activities engaged

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Description of the HW Layer of the SEOD System



Server with an ORACLE database serves for the central registration of the SEOD system data.



Administrator Station is designed for supervisors (dosimetry specialists) using the SEOD system. SW modules installed on these PCs communicate with the system server.



TED Terminal is designed for the simple communication of workers in CA with the SEOD system upon their entrance/exit to/from the CA of a nuclear power plant.



DPD Dispensers of Personal Dosimeters are devices allowing automatic, fast and controlled distribution of various types of personal dosimeters (OSL, TLD, RPL, etc.).

Description of the SEOD System Software

- **Administration module** serves to administrate the SEOD system and TED electronic personal dosimetry terminals.
- **The Register Module** serves to keep records of persons (personal information, validity of entrance permit into CA and medical examinations, etc.), workplaces, electronic personal dosimeters (including the calibration validity), electronic dosimeter alarm thresholds, personal dose limits, personal protective equipment, etc.
- **Stays and Doses Module** is designed to register all completed stays in a controlled area, featuring many detailed specifications, such as the stay length, time and place of CA entrances/exits, application of protective equipment, electronic dosimeter conditions, etc. It allows the displaying of the current status of workers' received individual doses, collective doses, etc.
- **DPD Module** serves to register the dosimeters inserted into DPD, their assigning to individuals, distribution control and dosimeter collection.
- **Contamination Module** serves to register data measured using contamination monitors.
- It is possible to add other modules upon the customer's request.



Specifications

Number of electronic dosimeters	unlimited
Number of terminals	max. 99
Number of servers	1
Number of administration stations	max. 99

Number of persons entering the CA/day unlimited

Number of issued radiation work permit /day unlimited

Database records:

number of persons max. 10⁷

Models and Accessories

Type	Description
N/A	Electronic Personal Dosimetry System SEOD
Related Products	
K0040	TED Electronic Dosimetry Terminal
K145X	DPD - Dispenser of Personal Dosimeters
S0803	Radiation Monitoring System
Contamination Monitors	
K130X	Personnel Exit Monitor Exitscan-2
K101X	Hand and Foot Contamination Monitor - HF series
K114X	Personnel Portal Monitor Portex-2

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