

Improving the Efficiency of Use and Increasing the Resource of Physical Protection Inspection Equipment - the Role of Training Courses for the End User



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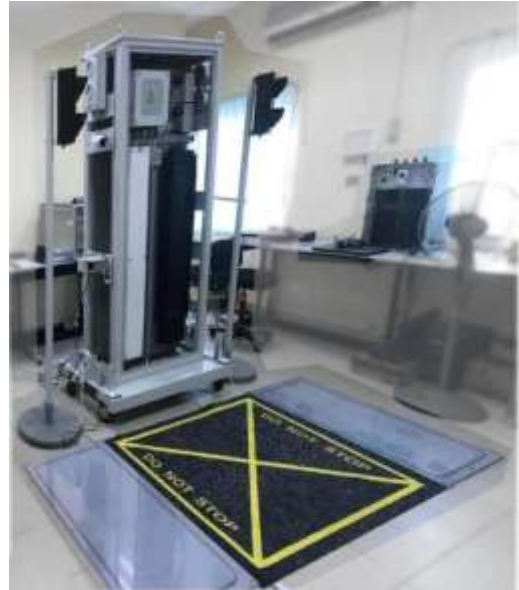
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The most important characteristics of the radiation monitoring equipment used to ensure Nuclear Safety are: reliability, stability in operation, maintainability, reparability, long life of the system. To achieve these indicators, in addition to the quality assurances declared by the equipment manufacturer, an important role is played by the culture of operation and maintenance of on-site inspection systems. Personnel who use and maintain inspection equipment must have the appropriate qualifications, primarily the necessary knowledge of its principles of operation, design and maintenance. In this regard, to conduct high-quality education and training of the end staff is of fundamental importance.



2. The impact of the quality of the learning process on the effectiveness of the results is evaluated. In the educational process, in addition to lectures and visual material (presentations, video courses), it is necessary to use technical means: real equipment nodes of a specific manufacturer, which allow reproducing possible faults and practical training of personnel in their elimination. This contributes to the development of practical skills and leads to an improvement in real results.



This report summarizes the experience of «YAFI» conducting training for personnel who operate and maintain inspection equipment for physical protection: radiation monitoring equipment, determinants of explosives, and integrated inspection systems - both at Russian enterprises and within the framework of the IAEA programs. Based on the experience gained, the following conclusions are made:

1. The need for staff training at different levels is shown:

- Training of first line officers (operators) - response to alarms generated by equipment. In particular, for the alarms generated by radiation monitoring systems, the primary separation of "innocent alarms" caused by natural or medical isotopes;
- Training of service personnel - carrying out routine and periodic maintenance, scheduled inspection of basic functional characteristics. in On-site small repair skills training (e.g. possible replacement of faulty modules from the spare parts kit);
- In-depth theoretical and practical training with the provision to students of all technical documentation, including electrical circuits, allowing for the repair of any complexity without the involvement of representatives of the manufacturer.



3. The efficiency of training is shown not only in specialized centers, but also on the basis of the manufacturer, and, especially, directly at the facilities where equipment is located, that is, the workplaces of personnel. In this case, learning takes place on the same equipment that is actually used in work. The specifics of the specific place of use and equipment operating conditions are taken into account.

4. SEC "YAFI" successfully implements all the above training possibilities. In frames of IAEA programs have trained specialists from Malaysia, Indonesia, Bolivia, Serbia and Moldova. A large volume of training was carried out at Rosatom enterprises in the Russian Federation.

