

Updating nuclear instrumentation knowledge in Latin America

The challenge...

All activities that use nuclear technology, whether in the fields of power production, human health, agriculture, industry or research, use measuring instruments. The field of nuclear instrumentation is closely associated with the development of nuclear electronics and software and is very dynamic. Professional staff must therefore keep their knowledge constantly updated.

Countries in the Latin America region have been working with the IAEA for many years to develop and maintain knowledge about nuclear instrumentation, and the IAEA continues to contribute to supporting the assimilation of technological changes and development of common procedures for standardizing the maintenance, development, refurbishing, upgrading and automation of nuclear instrumentation.

The project...

To upgrade professional knowledge and skills, an IAEA technical cooperation project facilitated the exchange of new information on nuclear instrumentation among engineers and technicians through fellowships and regional training courses. The project also supported the maintenance, development, refurbishing, upgrading and automation of nuclear instrumentation. Staff from laboratories in the region were also trained to maintain the X ray equipment used in medical and industrial applications.

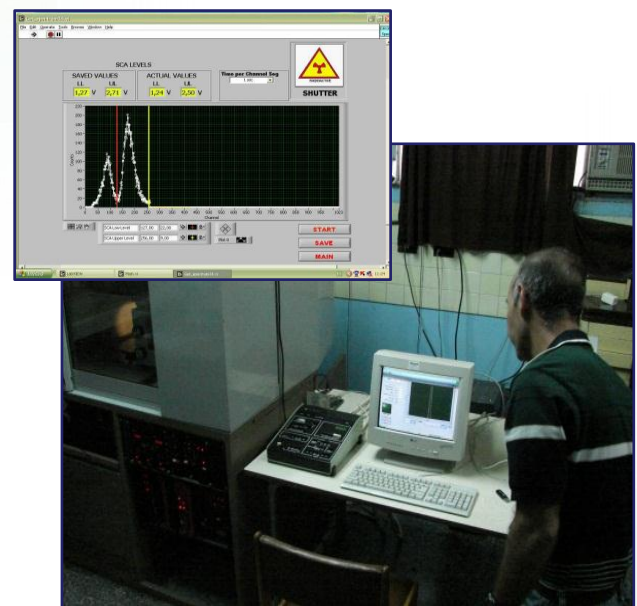
In addition, the project helped with the development of common quality assurance and control procedures to ensure the quality of the electronics services provided by the participating nuclear instrumentation laboratories.

The impact...

The project improved the quality of electronics services and extended the useful life of instrumentation in different laboratories in the region by developing both infrastructure and personnel capabilities. Most participating countries now have the minimum capabilities required to start refurbishment of instruments and to design complex systems involving the use of different instruments.

The inventories of the laboratories were harmonized; specialized software now allows record keeping not only of spare parts, components and documentation, but also of instrument status, maintenance and calibration. The quality of the results from electrical calibrations was improved by providing reference instruments and guidelines for uncertainty estimation and quality control practices.

In addition, a laboratory was created at ININ (Mexico) to provide recommendations in quality management of software design and validation.



DAQ control board and application software developed for instrument control and data acquisition.