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Atoms for Peace

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Improving non-destructive testing capabilities in Kazakhstan and Uzbekistan

The challenge...

Kazakhstan's industrial development plan has initiated rapid progress in the petroleum, gas and mining industries. To ensure quality control in these industries, non-destructive testing (NDT) methods are needed. In neighbouring Uzbekistan, NDT capabilities did not fully comply with international standards, which affected the country's radiation and ecological safety in uranium mining and other industries. The challenges facing these two countries led to two separate non-destructive testing projects: to establish an NDT training and certification programme and to upgrade NDT capabilities.

The projects...

The projects focused on building capabilities for Kazakhstan and Uzbekistan through expert missions, fellowships, scientific visits, a training course and provision of equipment representing all key NDT methods and auxiliaries such as personal dosimeters, area survey meters and sets of reference radiographs and specimens.

Experts advised on the appropriate structure for NDT training curricula and provided guidance on regulatory NDT documentation and on the development of quality systems for NDT laboratories. Core local personnel were trained and certified in basic NDT methods according to applicable international standards.

The impact...

As a result of these projects, the Institute of Nuclear Physics (INP) in Kazakhstan has the capability to obtain more precise and reliable information for the determination of defects in structural components. INP is now licensed by government authorities to provide NDT training and services. Its certification capacity covers NDT personnel involved in the nuclear sector. An ongoing accreditation process aims at establishing INP as an NDT certifying body and provider of training and services in various other industries in compliance with international standards.

Uzbekistan has upgraded the NDT Laboratory of the Navoi Mining and Metallurgy Combine to be a national provider of quality NDT services and training. In addition, the improved capability of the State Inspection for Safety in Industry and Mining to promote NDT best practices has laid the foundation for a national NDT certification scheme. These developments have improved industrial and ecological safety and extended the lifetime expectation of critical components related to mining, processing and transportation of uranium and in other industries, thus contributing economic benefits to these sectors.



Thickness measurement using an NDT technique.



Installing an acoustic emission sensor.

KAZ/8/004: Establishment of a Training and Certification Centre for Non-destructive Testing Methods
UZB/8/002: Development of Non-destructive Testing Capability