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Application of Radiation Science and Technology in the Republic of Tajikistan

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One of the IAEA National TC Projects having relation to radiation science and technology which was successfully implemented in Tajikistan was TAD/8/002 "Creating Non-Destructive Testing Capability"initiated in 2009. Tajikistan, situated in the one of the most seismic-affected areas in the world having a number of civil and industrial buildings, bridges, tunnels, pipelines, hydropower structures, dams and other objects, has only a very limited knowledge and application of non-destructive testing (NDT). The main objective of the project TAD/8/002 was to establish facilities for non-destructive testing of industrial equipment and components as well as for civil engineering structures in accordance with international standards. Fact-finding expert mission found out the detailed sectors and industries for the possible use of NDT technique in the country, checked on personnel availabilities, and visited the possible laboratory buildings. Several meetings with senior governmental officials were organized, where lectures on NDT for industries, including civil engineering and special purposes, QA management as well as training and certification were presented. They aimed in creating awareness among future possible alliances and end-users of NDT. Necessary equipment to be provided for the laboratory was discussed and agreed. Echograph with C-software; X-Ray generator, both with accessories and software for civil engineering applications; Magneto-Anisotropic indicator of mechanical stresses, model Stress Vision-with software for 2D and 3D presentations; ultrasonic testing calibration block with carrying case and certificate; several laboratory equipment, supplies were purchased. Scientific visits were organized to gain knowledge about the NDT applications in industry and civil engineering structures, the new and advanced developments in the field of NDT including the NDT of civil engineering structures. Two group fellowships have been granted to gain some hands-on experience in the use of above NDT methods in industry, acquire training at Levels 1 and 2 in the four basic NDT methods, to familiarize with standards and procedures for carrying out NDT tests in industry and to take certification examinations at Levels 1 and 2 in the above methods. During the national seminar presentations on infrared thermography stress monitor techniques, rebound hammer, carbonation method, ground penetration radar, ultrasonic techniques, ultrasonic pulse velocity testing and electromagnetic method were presented. In addition other methods, e.g. the oldest and most commonly and widest used method Visual techniques, was also presented. Training materials on NDT for industrial and civil engineering safety in Russian language have been prepared and reviewed. Experts advised on formation of infrastructure for accreditation and certification of NDT in Tajikistan to meet requirements of international standards. NDT capability in the country has been developed. Non-destructive testing laboratory has been created and equipped, personnel properly trained and non-destructive testing procedures established. Procedures for non-destructive control service have been documented and established. Tajikistan has now complete know-how, through which industrial and ecological safety can be improved, risk and extended lifetimes of critical components in civil engineering, transportation, uranium mining and other industries reduced.

Country/Organization invited to participate

Tajikistan

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