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Practical Results of the Creation of the Nondestructive Assay Measurement Training Laboratory at the Russian Methodological and Training Center

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The Russian Methodological and Training Center (RMTC) was created at the Institute of Physics and Power Engineering (IPPE) in Obninsk, Russia as a result of collaborative efforts between the United States, the European Commission and the Russian Federation.

A significant result of the collaboration was the creation of the RMTC's Nondestructive Assay (NDA) Measurement Training Laboratory, where hands-on experience in making NDA measurements can be acquired during conduct of courses.

The NDA laboratory is equipped with standard reference materials, radioactive sources, various gamma-spectrometers for determining uranium and plutonium isotopic composition, active and passive neutron coincidence counters for measurement of U-235 and plutonium mass in containers, waste drum monitors to measure plutonium and U-235 mass in waste, neutron counters, a hybrid K-edge densitometer and a calorimeter. This broad range of equipment provides the opportunity to provide practical training in all aspects of nondestructive measurements needed within the Russian Federation.

The laboratory has a wide spectrum of State Reference Materials (SRM) of uranium oxide and plutonium oxide. State Reference Materials for BN-600, VVER-440 and RBMK fuel elements and fuel assemblies have also been fabricated and certified. The laboratory has equipment models and special uranium samples to conduct courses on measuring uranium and plutonium hold-up in process equipment.

The capability of the lab especially in the field of NDA of plutonium in items and wastes gave the possibility for RMTC to train of IAEA inspectors in advanced plutonium verification techniques.

This paper briefly describes the RMTC NDA laboratory's capabilities and discusses the training course developed by RMTC for IAEA inspectors.

Country or International Organization

Russian Federation

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