Serbia

IAEA Member State since October 2001

IAEA Technical Cooperation Programme

Key achievements in Serbia

- 2018: Serbia adopts the Law on Radiation and Nuclear Safety and Security, enabling further harmonization with IAEA nuclear safety and security standards.
- 2014–2016: Serbia establishes the National Registry of Nuclear Materials, Radioactive Sources, Wastes and Exposures, through the Regulatory Authority Information System (RAIS).
- 2012: The Radioactive Waste Storage Hangar H3 and Secure Storage for Sealed Radioactive Sources becomes operational in Serbia.
- 2010: Repatriation of two-and-a-half tonnes of highly radioactive spent fuel from the RA research reactor to the Russian Federation.

Atoms for peace and development

Widely known as the world's 'Atoms for Peace and Development' organization within the United Nations family, the IAEA is the international centre for cooperation in the nuclear field. The Agency works with its Member States and multiple partners worldwide to promote the safe, secure and peaceful use of nuclear technologies.

The IAEA's technical cooperation (TC) programme helps countries to use nuclear science and technology to address key development priorities in areas including health, agriculture, water, the environment and industry. The programme also helps countries to identify and meet future energy needs. It supports greater radiation safety and nuclear security, and provides legislative assistance.

The Vinča Institute of Nuclear Sciences in Belgrade received IAEA support to upgrade its calibration service for medical applications of ionizing radiation used to diagnose diseases such as cancer. (Photo: M Zivanovic, Vinča Institute)

SUSTAINABLE DEVELOPMENT GOALS

Recent project successes

Industrial applications and radiation technology

The Radiation Unit of the Department of Radiation Chemistry and Physics at the Vinča Institute of Nuclear Sciences provides irradiation services for many areas in industry, such as the production of medical equipment, food, medicine and the conservation of cultural heritage. It has a maximum capacity of 25 000m^3 irradiated products per year. Through IAEA assistance since 2009, the Radiation Unit introduced a reliable electron paramagnetic resonance (EPR) dosimetry system, which is a highly accurate method to measure low levels of ionizing radiation and improves the reliability of the quality control process for medical device sterilization and food irradiation. Furthermore, the Unit enhanced the operation of the radiation plant and gaining an ISO 9001:2015 certification for its Quality Management system, an ISO13485:2016 for medical devices, and a series of ISO 11137 standards for the sterilization of healthcare products. The IAEA supported scientific visits and the procurement of equipment to help improve the health and safety of medical staff, patients and the public. It also helped to develop the country's safety regulations and radiation protection standards.

Human health

The Centre for Nuclear Medicine, part of the Clinical Centre of Serbia, improved the skills of its staff in diagnosing cardiological, neurological and oncological diseases as well as infections and inflammations. The IAEA helped to increase the potential for positron emission tomography/computed tomography (PET/CT) diagnostics using radiopharmaceuticals by providing expert advice and training for medical doctors, medical physicists, technologists and radiopharmacists. Working to improve its services in accordance with the recommendations of the IAEA Quality Management Audits in Nuclear Medicine Practices (QUANUM) mission, the Centre further received an accreditation as a Nuclear Medicine Department and training centre from the European Association of Nuclear Medicine and the European Union of Medical Specialists for 2016–2020. In 2018, the Centre also hosted the European School of Multimodality Imaging and Therapy to facilitate a regional exchange of knowledge. In addition, through the Agency for Accreditation of Health Care Institutions of Serbia in the Ministry of Health, the Centre first

introduced national standards for nuclear medicine accreditation and became the country's first accredited nuclear medicine department.

Radioactive waste management

The decommissioning of the RA research reactor and the upgrade of radioactive waste management at the Public Company Nuclear Facilities of Serbia (PC NFS) has been a longstanding priority of the Serbian Government, to ensure the protection of the public and the environment from potentially harmful effects of ionizing radiation. The IAEA assisted the country to stabilize and prepare two-and-a-half tonnes of highly radioactive spent fuel for repatriation and long term storage in the Russian Federation, making it the largest single shipment of spent nuclear fuel supported by an international programme. Further assistance included supporting the procurement of equipment to improve waste storage and processing facilities at the the PC NFS in Serbia. IAEA support has allowed PC NFS to improve the management of low and intermediate level radioactive waste, enhance capabilities for radioactive waste chemical characterization and upgrade waste conditioning and storage.

Active national projects

- Safely Managing Waste, Sealed Sources, Decommissioning and Site Remediation Activities at the Vinca Institute (SRB3004)
- Strengthening of National Reference Laboratories Capacities for Early Detection, Epidemiological Surveillance and Control of Transboundary Animal Diseases in Emergency Situations (SRB5004)
- Improving Diagnostics and Treatment of Chronic Diseases (SRB6013)
- Strengthening the National Capacities for Radiopharmaceutical Production (SRB6014)
- Upgrading Radionuclide Therapy and Diagnostics and Improving the Advanced Application of External Beam and Brachytherapy (SRB6015)

Serbia also participates in 34 regional and 2 interregional projects, mostly in the area of health and nutrition.

Previous IAEA support to Serbia

Previous IAEA support to Serbia has focused on strengthening radioactive waste management, enhancing national capabilities for environmental radioactivity monitoring, improving cancer diagnosis using nuclear medicine technology and supporting sustainable land management using nuclear techniques. In addition, through a series of trainings, the IAEA improved the regulatory capacity of staff at the Radiation Protection and Nuclear Safety Agency (SRPNA), now called Serbian Radiation and Nuclear Safety and Security Directorate (SRBATOM).

IAEA support to Serbia, 2009–2019

504 trained (including 280 women)

77 international experts provided

264 attended specialist meetings (including 120 women)

Priority areas of support

- Improving regulatory body functions
- Upgrading nuclear and radiation safety
- Supporting decommissioning planning
- Strengthening radioactive waste management
- Enhancing human health
- Improving environmental monitoring
- Strengthening nuclear technologies and their applications

Serbia's contribution to South-South and triangular cooperation, 2009–2019

124 expert and lecturer assignments provided by Serbia

5 training courses hosted

19 fellows or scientific visitors hosted

Based on data available as of April 2020

Cancer control imPACT Review conducted: February 2010

Strategic documents supported

- United Nations Development Assistance Framework 2016–2020
- Country Programme Framework 2010–2015, signed in September 2009

www.iaea.org/technicalcooperation

The IAEA collaborates with National Liaison Officers and Permanent Missions to deliver its TC programme.