

## Key achievements in Armenia

- 2018: A calibration system for X ray dosimetry is established at Armenia's Secondary Standards Dosimetry Laboratory, strengthening radiation safety and protection in diagnostic radiology (mammography, computed tomography and dental imaging).
- 2013: The Seismic Telemetric Network, able to locate and record earthquake hypocentres within 150 km, is established near the Armenian Nuclear Power Plant (ANPP) in Metsamor.
- 2013: The national nuclear regulatory infrastructure is improved through the adoption of safety regulations aimed at strengthening the nuclear and design safety, and operational reliability ANPP to support its lifetime extension.

## 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.

## Recent project successes

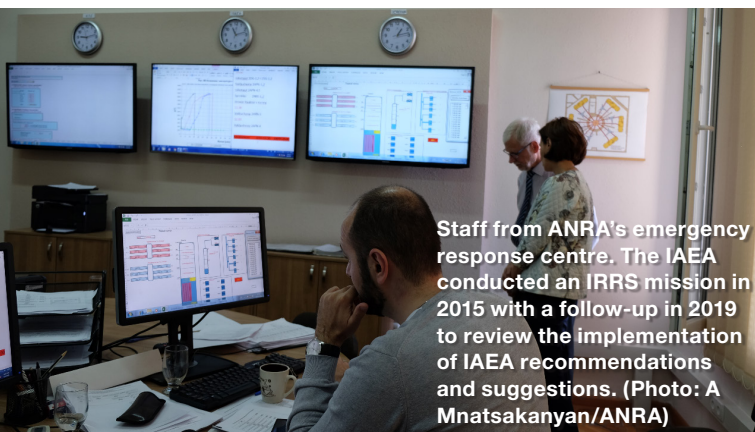
### Governmental nuclear regulatory and safety development

The Armenian Nuclear Regulatory Authority (ANRA) strengthened its capacity in nuclear safety and radiation protection with IAEA support. This included developing ANRA's organizational framework, in line with IAEA safety standards and international practice. An IAEA Integrated Regulatory Review Service (IRRS) and a follow-up mission were conducted at the request of the Government of Armenia and hosted by ANRA in 2015 and 2019, respectively. These missions provided recommendations for the organizational framework and noted ANRA's progress in several areas, such as the elaboration of a policy and strategy for nuclear and radiation safety, the adoption of a spent fuel and radioactive waste management strategy, and the enhanced emergency preparedness and response capabilities.

### Human health

With IAEA support, the Government strengthened and improved capabilities at the Nuclear Medicine Department of the National Centre of Oncology (NCO), enabling a higher level of molecular imaging for early and more accurate cancer detection. IAEA assistance included expert advice and training for medical staff, and an upgrade of the single-photon emission computed tomography (SPECT) camera, previously procured by the IAEA, to a full diagnostic SPECT/computed tomography (CT) system. In addition, ancillary radiation protection equipment was provided. Infrastructure was upgraded and specialised training was provided to introduce lymphoscintigraphy and lymph node detection techniques (using Technetium-99 as an isotope) for breast cancer patients. Moreover, a radioiodine treatment unit was established to evaluate and manage 50 to 65 thyroid cancer patients per year using Iodine-131.

IAEA support enabled the NCO to conduct earlier and more accurate diagnostics and radiotherapy planning for cancer patients. The upgrade of nuclear medicine services also helped to increase radionuclide bone imaging studies from 300 to 600 patients per year. The IAEA continues supporting the expansion and improvement of the NCO's services.



Staff from ANRA's emergency response centre. The IAEA conducted an IRRS mission in 2015 with a follow-up in 2019 to review the implementation of IAEA recommendations and suggestions. (Photo: A Mnatsakanyan/ANRA)

## Nuclear power

The Armenian Nuclear Power Plant (ANPP) in Metsamor provides around 40 per cent of the country's electricity. This puts great responsibility on the licensee to maintain plant reliability and safety. To that end, the IAEA provided training and expertise in order for the plant to continue to conform to IAEA safety standards and practices, and enable its license to remain valid until 2026.

## Active national projects

- Ensuring Inspections of the Nuclear Power Plant are Conducted by Staff Certified in Non-Destructive Testing (Not Funded) (ARM1001)
- Enhancing Operational Safety for Lifetime Extension of the Nuclear Power Plant Unit 2 in Accordance with International Standards (ARM2004)
- Improving the Quality and Safety in Radiotherapy and Medical Imaging (ARM6014)
- Strengthening the National Regulatory Framework for Nuclear and Radiation Safety for Licensing Long Term Operation of the Nuclear Power Plant Unit 2 (ARM9029)

Armenia also participates in 35 regional and 3 interregional projects, mostly in the areas of health and nutrition, energy planning and nuclear power, and radiation protection and nuclear safety.

## Previous IAEA support to Armenia

In recent years, IAEA support focused on strengthening the national regulatory infrastructure on nuclear and radiation safety, improving the operational reliability of the ANPP, supporting radiation protection of workers and building capacity in environmental monitoring. Additional support was provided to establish an environmental radiation monitoring system for food and water contamination and for releases and discharges resulting from nuclear and radiological accidents.



## IAEA support to Armenia, 2009–2019



**360** **252** **336**

trained  
(including 77 women)

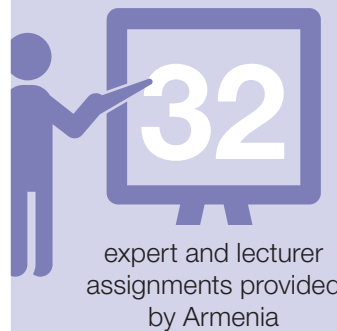
international  
experts  
provided

attended specialist  
meetings  
(including 59 women)

## Priority areas of support

- Supporting nuclear and radiation safety and security
- Improving early diagnosis and treatment of cancer patients
- Ensuring a continuous and safe supply of nuclear power

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



expert and lecturer  
assignments provided  
by Armenia

**17**

fellows or  
scientific visitors  
hosted

Based on data available as of April 2020

## Cancer control iMFACT Review conducted: May 2012, April 2019

## Strategic documents supported

- United Nations Development Assistance Framework 2016–2020
- Country Programme Framework 2018–2023, signed in September 2018
- Integrated Nuclear Security Support Plan 2018–2020

Nuclear medicine staff at the National Cancer Centre of Oncology scan a patient using a single-photon emission computed tomography/computed tomography (SPECT/CT) imaging system, which helps to increase the accuracy of disease diagnosis. The IAEA supported the Centre with training and upgraded its clinical equipment. (Photo: A Sargsyan/National Centre of Oncology)

[www.iaea.org/technicalcooperation](http://www.iaea.org/technicalcooperation)

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