Innovative Postgraduate Education in The Field of Environment Protection: Methods and Tools

MENV PRO
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Cooperation of CENS and ANPP in the Field of Higher Education

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BIO Presenter

Graduated from University

1966, PhD in Physics and Mathematics

1981 – up to now – Laboratory of Environmental Protection, ANPP

2016 – up to now - Head of Laboratory for Technical and Forensic Analysis of Nuclear and Radioactive Materials (FL)

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The goal of presentation

The goal of my presentation is to familiarize with the tasks in the field of radiation monitoring of the environment, which are being solved during the operation of the Arm NPP (as well as in the process of decommissioning the NPP) and areas in which the cooperation between the NPP and environmental specialists will be fruitful and useful for both parties.

It is in these areas that the Armenian NPP can provide a number of jobs for relevant specialists, as well as contract work.

Our co-operation in the field of environment radiation monitoring

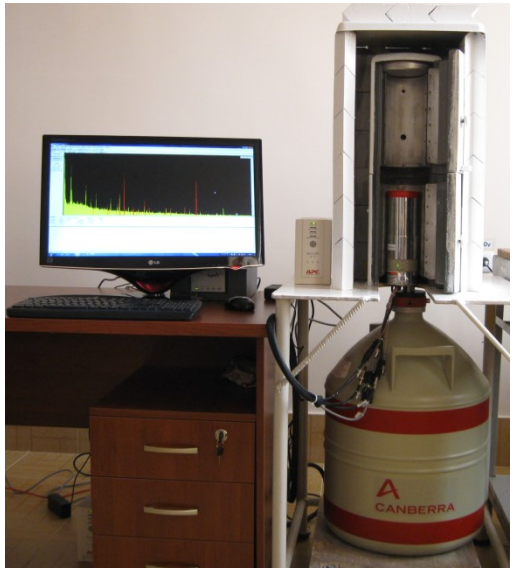
- International Agency of Atomic Energy
- Nuclear Regulation Authority of RA (ANRA)
- The International Scientific and Technical Centre (ISTC)
- Center for Ecological-Noosphere Studies (National Academy of sciences of RA)
- The Ministry of Ecology

What environmental objects are under the constant monitoring during all period of operation?

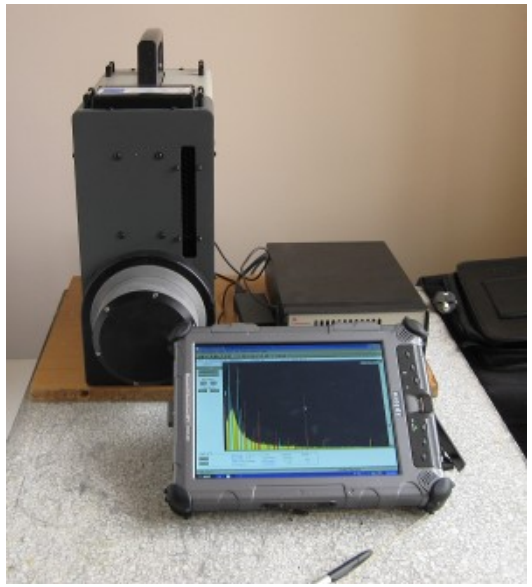
- Atmospheric air
- Fallouts from atmosphere
- Soil
- Vegetation
- Water pools (water, benthic sediment and seaweed)
- The underground waters streams under a platform of the ANPP
- The agricultural products which are grown up in ANPP location area
- Air emissions
- Water discharges
- Separately - radioactive waste storages

Measured parameters:
Radionuclide composition, specific activity, total beta and alpha activity, dose rate of gamma radiation

Main equipment used



Ultra low-background cryostat 7500SL



Falcon 5000 HPGe-based portable identifier

iMatic™ Gas-less Automatic Alpha/Beta Counting System

Alpha spectrometer

Basic requirements for devices: high sensitivity, low background, stability. The programs used for processing the obtained spectra must meet the IAEA requirements.

Therefore, in addition to knowledge in the field of ecology, applicants must have certain knowledge in the field of nuclear physics and at least master the basics of gamma spectrometry and other measuring methods (radiometry, etc.).

So-called classical ecology

I would also like to note that the Laboratory of Environmental Protection has an environmental monitoring group that monitors the chemical composition of waste water from nuclear power plants, and also monitors various (non-radioactive) waste generated during operation.
In this area, the Arm NPP can also provide a field of activity for ordinary ecologists.

Conclusions

It seems to me that all of the above allows us to hope that there are areas and opportunities for successful interaction between nuclear power plants and specialists in the field of radioecology.

In conclusion, I would like to note that for several years the Armenian NPP has been fruitfully cooperating with CENS in the field of radioecology. We have an agreement on mutual cooperation.

Why is this collaboration so important to us?

The station monitors a limited area with a radius of 12 km from the nuclear power plant and has created a database on the radiation situation during the entire period of operation (44 years). On the other hand CENS conducts monitoring throughout Armenia, including the areas near the Armenian Nuclear Power Plant.

It is extremely important for us to compare the CENS data with our database in order to evaluate the possible impact of the NPP on the environment.

This is all the more possible since we have carried out interlaboratory measurements of some reference sources.

I also appreciate our collaboration with CENS in the field of nuclear forensics

Lectures for MS and PhD students of CENS and sharing experience in the field of radiation monitoring

THANK YOU !

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