



## RESEARCH AND PRODUCTION ENTERPRISE "AKP"

- Design, manufacturing and installation of  $\gamma$  and  $\beta$  spectrometers of ionizing radiation
- Methods of samples preparation
- Application software
- Warranty and post-warranty service
- Trainings and consulting

## RADIATION CONTROL OF TECHNOLOGICAL PROCESSES AT NPPs

### SAFETY

significant improvement of radiation safety  
 reducing or limiting radiation exposure to NPP's staff

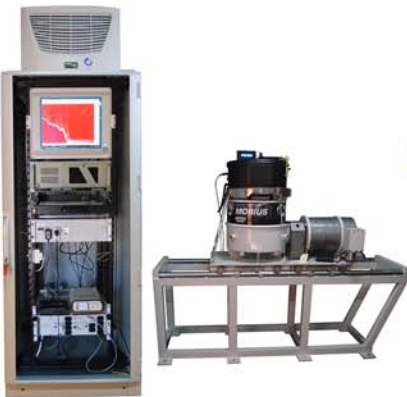
### NON-DESTRUCTIVE TESTING

non-stop operative control of technological processes at NPP  
 SRW control in any form primary packages without sampling

### COMPATIBILITY

devices can be used both individually and as structural part of the system of radiation monitoring and safety control of NPPs and radwaste management facility

## SPECTROMETRIC COMPLEX STPK-01



Spectrometric complex for on-line monitoring of the primary coolant «STPK-01»

- Discrete – continuous on-line monitoring in a wide values of iodine radionuclides specific activity  $^{131}\text{I}$ - $^{135}\text{I}$  in the VVER primary coolant circuit
- Periodic monitor of the reference radionuclide's specific activity important for the primary coolant's technological condition assessment

**UNINTERRUPTED CONTROL OF THE ACTIVITY OF RADIONUCLIDES IN THE FIRST CIRCUIT COOLANT**

## GAMMA SPECTROMETER SEG-001M "AKP-S"-TRO

- On-site definition of activity of unsorted solid radwastes of 1 and 2 groups in various package different forms and sizes (stacks, containers, metal canisters) before shipping to depositories.
- Plant determines the isotope structure of gamma-radiation radionuclides, which activity exceeds 1 %÷2 % of the total activity of measured solid radioactive wastes (SRAW).

**MEASUREMENT OF OBJECTS OF ANY FORM WITHOUT SAMPLING TO OPTIMIZE THE PROCESS OF SRAW HANDLING**



## WHOLE BODY SPECTROMETER "SICH-AKP"



- Detection of  $^{241}\text{Am}$ ,  $^{131}\text{I}$ ,  $^{137}\text{Cs}$ ,  $^{40}\text{K}$ ,  $^{60}\text{Co}$ ,  $^{54}\text{Mn}$  and other gamma-emitting radionuclides in whole body and particular organs
- Designed to be used for individual staff control at NPPs, research institutions, radiation and ecological monitoring, safety services, population control at sanatorium and spa-resorts
- Can be supply with 1, 2 or 3 detectors depending on Customer's tasks
- Information system of database operation lets calculate yearly coming in of radionuclides and dose loads by the three models

### PERSONNEL INDIVIDUAL CONTROL

## SEG-002-"AKP-P" SEMI-CONDUCTOR GAMMA SPECTROMETER

- A coaxial HPGe Detector with lead shield is used to identification and determination of specific activity of radionuclides from various types of environmental objects such as rocks, minerals, sludge, slag, soil, plant, sediment and particulate matter in air
- Low level of instrumental background and threshold for radionuclide detection
- Separate and simultaneous measurement of activity of 100 radionuclides



### RADIONUCLIDES IDENTIFICATION IN THE COMPOUND ISOTOPES MIXTURE IN COUNTING SAMPLES

## MONITORING SYSTEM OF STEAM GENERATOR LEAKS «AZOT-16»



- Program and technical complex for leak proving in the steam generators by mean of  $^{16}\text{N}$  activity in the live steam
- On-line monitoring of  $^{16}\text{N}$  activity in the live steam
- Leak determination proving in the steam generator (kg/h)
- Information displays on the control room or central switchboard for radiation control
- Alarm in case of test parameters deviations from allowed level

### LEAK PROVING MONITORING IN STEAM GENERATOR

## PROFESSIONAL SOLUTIONS FOR RADIATION CONTROL AND MONITORING

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