**ANNOTATION**

of educational Program

**18.05.02 Chemical Technology of Modern Energy Materials**

**Specialization: Chemical Technology of Nuclear Fuel Cycle Materials**

**Program Name**: 18.05.02 Chemical Technology of Nuclear Fuel Cycle Materials

**Objectives**: the design and operation of water and technological pyrochemical process spent nuclear fuel reprocessing; developing the technology of the manufacture of MOX fuel; development of technology for radionuclides; ensuring water chemistry research reactors; radioactive waste; radiopharmaceutical production; the functioning of the positron emission tomography.

**Terms of training** in full-time education are 5,5 years (specialty).

**Graduate Department**: Department of Radiochemistry.

**The area of professional activity**: development, design and operation of manufacturing processes and equipment for the extraction of materials of the nuclear fuel cycle of nuclear power from natural and technogenic raw materials, processing of spent nuclear fuel and radioactive waste, separation of isotopes of light elements and their applications; study radiation resistance of materials and radiation-chemical processes in the coolant of nuclear power plants.

**Objects of professional activity**: raw materials containing uranium, zirconium, radioactive elements, rare metals, nuclear facilities; their chemical compounds and materials on their basis; natural and technogenic raw materials containing isotopes of the light elements; processes of extraction, concentration and purification; equipment, tools and methods of analytical control of these processes in the laboratory and industrial applications.

**Features of the curriculum**: basic and special disciplines: foreign languages; mathematics; physics; computer science; fundamentals of the economy and production management; general and inorganic, organic, analytical, physical chemistry; chemistry of radioactive elements, nuclear energy materials; physical and chemical methods of analysis; processes and devices of chemical technology; general chemical engineering; radiochemistry; preparation and isolation of radioactive isotopes; chemical technology and other radiopharmaceuticals.

**The list of enterprises for practical training and employment of graduates**: Educational Practice - at the end of 2nd year; General Practice - after the 3rd course, 2 Production Practices on the 4th and 5th courses, Pre-diploma Practice - in the 6th course. The students get all kind of Practices at the base department laboratories at Research Institute of Atomic Reactors.

Employment of graduates is expected to Research Institute of Atomic Reactors, Rosatom State Corporation enterprises, the Federal High-Tech Medical Radiology Center of Dimitrovgrad and in leading medical centers in the country.