

## **EDUCATIONAL AND PROFESSIONAL PROGRAM DESCRIPTION**

**Branch of knowledge 14 – Electrical engineering**

**Specialty 144 – Thermal power engineering**

**Educational program – Thermal power engineering**

**(second (master's) level of higher education)**

Educational qualification "Master of Thermal power engineering"

**Availability of accreditation.** Absent.

The educational program is aimed at studying thermal energy equipment of thermal, nuclear power plants and industrial enterprises; steam and water boilers; heat engines; heat and mass exchange devices; heat pump and refrigeration units; coolants and working bodies; energy accounting systems and parameters of energy carriers; regulation and automation systems of thermal power facilities; climate engineering systems.

**The purpose** of the educational program is to prepare a highly qualified, competitive master who has successfully completed the educational program and is able to solve complex specialized tasks and practical problems in the field of thermal power engineering during the implementation of professional activities or in the process of learning, which involves conducting research and/or implementing innovations and is characterized by uncertainty of conditions.

**Tasks** of the educational program:

- training of specialists capable of developing and researching physical, mathematical and computer models of objects and processes of the thermal power engineering, checking the adequacy of the models, comparing the modeling results with other data and evaluating their accuracy and reliability;
- formation of the ability to analyze and evaluate the problems of thermal power engineering related to the development of new technologies, science, society and economy;
- acquiring practical skills to make effective decisions using modern methods and tools for comparing alternatives, assessing risks and forecasting;
- formation of the ability to plan and implement measures to increase the energy efficiency of thermal power facilities and systems, taking into account existing limitations and risk assessments in the thermal power engineering, to evaluate the effectiveness of such measures;
- training of specialists capable of conducting scientific research with the aim of increasing the efficiency of the use of energy resources in thermal power plants and systems, developing and justifying energy saving measures,

minimizing harmful emissions and reducing the negative impact on the environment.