SUMMARY

The diploma projet comprises: 87 pages, 42 figures, 5 tables and graphical part on 3 pages A1.

The purpose of the work is to develop and research the performance appraiser on the basis of an artificial neural network in the variation of the resistance of the hydraulic network in conditions of stabilization of pressure.

In this work an analytical review of the general pumping plants is carried out, the characteristics of the operation of the centrifugal pump are shown, the concept of the neural network and its properties are revealed, and the neural network architecture is analyzed. The pump has been selected, its power is calculated and the actuator is selected according to the pump power. A detailed description of the laboratory installation was carried out, on the basis of which the static characteristics of the turbomechanisms were removed. The range of adjustment of the hydraulic network at various engine speeds is calculated. The basic mathematical models of asynchronous motor, pump and frequency converter are presented.

The development of the neural network, its training and checking of efficiency at the variation of parameters of the hydraulic network in the conditions of stabilization of pressure is carried out.

TURBOMECHANISM, EVALUATOR, PUMP INSTALLATION, PRODUCTIVITY, PRESSURE, METHODOLOGY, TECHNOLOGICAL PARAMETERS, NEURAL NETWORK, HYDRAULIC RESISTANCE.