ABSTRACT

Diploma project is presented on 82 pages contains 33 figures and 3 tables.

In this project was investigated and designed the electomechanical control system of pump unit with pressure stabilization. Research of the operation was carried out for the frequency control algorithm of the drive motor U/f^2=const.

Virtual model of pump unit was constructed in Matlab and its hydraulic part was developed in Simhydraulics library, Also the model consists the drive motor 4A71B2Y3 and the frequency control algorithm. The pressure stabilization was achieved by using PI-controller of pressure. Transients that describe the operation of induction motor were obtained by the mathematical simulation. This transients are presented for different varies of hydraulic resistance.

The electric drive that meets the requirements of the system has been chosen from the catalog. The conclusion has been made.

PUMP STATION,, PRESSURE, PRODUCTIVITY, INDUCTION MOTOR, FREQUENCY CONTROL.