

Annotation

In this degree work a modernization of the electric drive of an exhauster boiler was considered. These aggregate is based on the modern frequency-converter, which allows to regulate the current of the outflow of gases by the changing a load during twenty-four hours. The modernization is in a replacement of an unregulated drive on an energy-saving frequency-regulated electric drive.

Basic principles of the work of aggregates as a water-heating boiler, an exhauster and the drive of the exhauster were described.

In the main part of the project the calculation of parameters of the exhauster's electric drive was made, the induction motor brand of ABB M2 AA250 and the frequency converter of Delta VFD-B were chosen. The transient characteristics of the frequency converter –induction motor system were considered. And dynamical characteristics of the system's model were considered as well. The system's model was assembled by Matlab program. With these program the curves of the transient characteristics by subsequent pounce and reset modes for a smooth start of the motor were received.

In the life safety section the working conditions of staff which serves the electric drive in the exhauster room were analyzed. The calculation of the lightning was made by the method of a utilization factor and the method of a power density.

In the economic part the calculation of an investment for the modernization, an economic benefit and a payback period was made.