

## Motorex – Implementation of an automatic heating system for 31 oil tanks

The scope of work included the design and construction of a control system for steam heating of 31 tanks. According to the design, the control system consists of two control islands connected to the main controller and operator panel. The main controller is located in the production hall in order to be able to inform operators about the current oil temperature in the tanks. In addition, a traffic light is placed within range of the monitoring cameras to provide information on system malfunctions. Outside working hours, such as on weekends or holidays, building security, can be kept informed of possible malfunctions in the tanks' heating system. A temperature sensor has been installed in each of the 31 tanks. The temperature sensor is mounted in a vagina so that the sensor can be removed if necessary without draining the oil tank. A solenoid valve (normally open) was installed on each of the steam pipelines feeding the heater in the tanks. This type of solution was decided to install in order to prevent freezing in winter, blocking the solenoid valve, which could consequently prevent the oil from being heated. In addition, the whole system was supplemented with an ambient temperature sensor and a vapor pressure sensor. By using the ambient temperature sensor, in the event of a significantly low temperature, the system will initiate a procedure to protect the pipelines from freezing. On the other hand, using the pressure sensor, we will be able to monitor the parameters of the steam feeding the heater in real time. The entire system is designed to operate automatically. In the event of a malfunction, it is possible to manually adjust the steam flow using the already existing valves.