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MODES OF JUSTIFICATION BIOGAS PLANTS

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Given the acute shortage of energy and financial resources in farm real way out of the crisis is creating biocomplexes. The use of biogas (BSU) can solve the problem of energy, environmental and agrochemical nature, and therefore a basic foundation for the creation of environmentally friendly technologies that enable more efficient use of natural resources.

The main obstacle to the development of biogas technology in Ukraine is present in Ukraine biogas plants have little relative value of the output of biogas. Question thermal efficiency of biogas plants and the economic efficiency of biomass has not been fully resolved for industrial scale plants.

The basis of the BSU laid biological fermentation process and decomposition of organic substances under the influence bacteria in anaerobic conditions, characterized by the absence of free oxygen, high humidity and temperature environment. Methane bacteria can withstand temperature fluctuations within 3-4 ° C in the day. The required temperature for the life of bacteria in fermentation products methane tanks in Ukraine climatic conditions may be maintained by using substantial additional energy costs. In modern BSU to maintain the temperature in the acceptable range in winter consumes almost 70% of the produced biogas. Substitution primary energy sources - biogas system supplies heat BSU electric energy subsystem installations will significantly increase the economic performance of the system.

The purpose of research - study application in BSU thermoelectric plants instead of heating systems that run on biogas and guidance method of calculation of the automatic adjustment thermoelectric facilities.

Materials and methods of research. To such installation's economic requirements, it is necessary to adjust the amount of accumulated heat depending on the ambient temperature, which will reduce the coefficient of simultaneity charging heaters and reduce the average temperature of the blocs, change the heat

flux electric heat accumulating heaters (Ethan), depending on the temperature of the products of fermentation digesters.

For this type of objects appropriate to apply simple discrete regulators.

Results. For the analysis and synthesis of automatic regulation of heat necessary to know the dependency created by Ethan heat flow from the flow of water through the channels there. But transfer function obtained by operating on the basis of physical and mathematical analysis of process heat, were transcendental irrational with variable parameters. Therefore, apply them in practical calculations quite difficult.

In this case it is advisable to use the transient response obtained with the classic method of solving differential equation of heat conduction, and apply the method of superposition. It was decided that in charge throughout the volume of TAM operates evenly distributed heat source and the temperature in the cross section is divided by a parabolic law.

Simultaneously switching the heating device has a positive effect on the mode voltage consumers.

To improve the quality of temperature control in facilities advisable to switch off with a delay of sections using a thermostat that responds to the outside temperature. At low it will support sections of permanently plugged and high - Off.

Conclusion

1. The system supplies heat to BSU primary source of energy - biogas should be replaced with electric power plants with heat accumulators subsystem.
2. Apply heat accumulating plants by 20-25% will reduce the cost of energy is spent on personal needs BSU.
3. Three position thermostats to reduce heat accumulating capacity switching cycles to regulate the installation and its operation.