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#### **THE USE OF FUZZY LOGIC FOR DYNAMIC POWER CONTROL OF STEAM BOILERS**

It recently became popular to install its own combined heat and power stations of low power, the so-called mini-Combined heat and power plants (CHP) on industrial enterprises, it allows the company to save money on buying electricity from supply companies, and receive steam and electricity for their own use purchasing only the main fuel (gas or oil).

Peak loads in the selection of couples are dynamic and may be different at different time moments (depending on various factors of production), boiler stay working at a given power. Similarly to the dynamic changes steam consumption can change so as consumption of produced electricity in the factory. Therefore depending on the actual needs and the total capacity of the equipment there are variations in the consumption of electricity. During the working time on factory total electricity consumption is variable, when such changes are occurring the power capacity of the turbine remains stable. Modern boilers have the ability to change their own power capacity not by the regime map, how it was in old boilers, but through direct task to the control system. But there is a problem in saving gas what used as fuel which using in the steam generation. Automatic control systems of boiler units working to stabilize parameters for maintain operating capacity, at what the automatic control system of boiler units and turbine operate independently. Therefore, to solve the problem of dynamic changes in load boilers CHP small power it is possible to use fuzzy logic. As one of possible variants is usage of blocks of fuzzy conclusions (so-called FUZZY systems) for boiler capacity control. The control action formed due to verify compliance of fuzzy rules with the actual values of parameters of the system. Creating of rules occurs according to operator experience that reflects his actions when technology parameters change. In this work the methods of dynamic power control of boilers using fuzzy logic and adaptive neural networks are considered. The control object is presented as an aperiodic link with latency and one disturbance, the regulator is set up in accordance for control object. To evaluate the action of two blocks with the same input data at research was used two objects with identical characteristics. As setpoint for regulator was used power capacity value for steam boiler-DKVR 6.5/13 to load 9 tons/hour.

**KEY WORDS:** *setpoint, regulator, control, object, fuzzy, adaptive*