



IMPROVEMENT OF EXISTING METHOD OF NATURAL GAS FILTRATION AS A WAY TO MAKE BOILER STATION MORE ENERGY EFFICIENT

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ABSTRACT

The natural gas which is transported through the gas lines almost always contains various hard admixtures (sand, dust, iron oxides and others). Before natural gas will enter the gas regulation point in the boiler room it is important to install the natural gas filter.

Natural gas filters can be classified based on the system they operate. There exist filters for gas - solid systems (mechanical gravity, mechanical inertia, centrifugal force, hydraulic, sieve, electrical) and filters for gas – liquid systems (condensation, coalescence, absorption, inertia, centrifugal force filters).

The main problem which takes place with the natural gas filter, is the pollution of the filter. The main indicator of the gas filter pollution is the pressure drop. Polluted gas filter can cause the following problems for the natural gas network in boiler room: flow decrease, outlet pressure decrease, boiler station power decrease, equipment life term decrease, change of exhaust gas composition, expenses increase.

Author of this work thinks that if before usual gas filter place the special equipment with the magnet, it will help to reduce the pollution of the gas filter downstream and prevent the problems mentioned before.

Some experiments were done on Latvian territory with the help of NdFeB (Neodymium Iron Boron) magnet, and the result of it shows that in metallic gas lines metal parts weight of the total pollution is from 35% until 60%. It means that using of magnets during the natural gas filtration in boiler station can give us good results.

Keywords: natural gas, filter, magnet, Neodymium Iron Boron