

magnet synchronous motor have an efficiency of 6 ... 8% higher than asynchronous motors [11], that, respectively, reduces the losses in the motor, power consumption and current. By reducing the current is also declining and the remaining loss: in the cable, transformer and control stations.

An important factor of optimizing operating modes of ESP is using intelligent control stations with a controller [12].

Thus and so, can be drawn the following conclusions:

1. Artificial oil lift is the most energy-intensive technological process in oil and gas companies, and therefore has the greatest potential for the introduction of energy saving measures.

2. Among the methods of artificial oil lift most relevant to optimize the energy consumption is using of ESP, as this method is exploited most of the wells of the Russian Federation (over 54%), which provide up to 75% of all produced oil.

3. The useful power of ESP expended by on lifting wellbore fluid, is only 20 ... 25% of total consumption, while the losses in the centrifugal pump can reach 47% or higher. Also, considerable power losses occur in the electric motor (12%), of the cable line (6%) and the transformer (7%).

4. Reducing the power consumption of the motor reduces losses in the following elements: cables, transformers, control station due to the current reduction.

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