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SHORTCOMINGS IN THE CALCULATION OF LOSSES AT THE CORONA DISCHARGE

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A corona discharge is a self-contained rosette, which is a winery in rather uneven fields, in some kind of ionization processes there can be seen only in the university region near the electrodes. Prior to this kind of fields, there is an electric field of wires in power lines. The crown becomes an interest in the connection with energy losses during the coronation of LEP. For example, on the lines of the above-high pressure to waste energy during the coronation of power lines in bad weather, store 100 ... 200 kW per kilometer of the line and more. In addition, the products of the ionization of power are directed to the isolation and metal fittings.

The link to the problem of the accuracy of the corona discharge at the current hour of the general polling station and the reduction of losses at the power transmission lines is more illuminated. When designing transmission lines use the calculated dependences of energy losses at the corona. A common formula for calculating corona losses at AC voltage is the empirical Peak formula for a single wire:

$$P = \frac{24{,}1}{\delta}(f+25)\sqrt{\frac{r_0}{S}}(U_ф - U_к)^2 10^{-5}\,, \qquad (1)$$

where δ – relative air density; f – frequency, Hz; r_0 – radius of a single wire, cm; S – the distance between the wires, cm; $U_Ф$ – the current value of the phase voltage, kV; $U_к$ – corona voltage, kV.

Split lines in phases are used on ultra-high voltage power lines. Myra's formula is used to determine corona losses for split wires:

$$P_к = knfr_0^2 E_э(E_э - E_к)\left(2{,}3lg\frac{1350E_э}{fr_0} - 1\right)\cdot 10^{-5}, \qquad (2)$$

where n – the number of wires in phase; f – frequency, Hz; r_0 – radius of a single wire, cm; Eк – the intensity of the crown, kV/s; Eэ – equivalent tension, kV/cm; k – weather ratio.

The disadvantage of Myra's formula is that all the variety of weather conditions is reduced to two weather groups: «good» weather (k = 44; Eк = 17 kV/cm) and «bad» weather (k = 31,5; Eк = 11 kV/cm).

Considering the popular formulas for calculating the corona discharge, it is obvious that the formulas have shortcomings and this is why they need adjustments to obtain more accurate values of the corona discharge.

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ANALYSIS OF HYDROPOWER PLANTS OPERATION PECULIARITIES IN THE ELECTRIC POWER SYSTEM OF TAJIKISTAN

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An analysis of global energy trends shows that energy security, reliability of supply, energy efficiency and environmental friendliness are major factors in its development. Under these conditions, the role of hydropower, which uses renewable, environmentally friendly hydropower resources, will increase. Hydropower is the most technologically mastered method of generating electricity, which is widely used around the world and is a guaranteed energy resource. Today, hydroelectric power plants (HPPs) operate in 159 countries and generate 16.3% of the world's electricity. Hydropower provides the most efficient process for generating electricity with low operating costs and a long operating life [1].

Tajikistan has the world's eighth-largest reserves of hydropower, of which it currently uses less than 5% (about 16-17 billion kWh out of a potential 527 billion kWh). The country's electricity supply is mainly provided by electricity generated by HPPs. The capacity of Tajikistan's power system is 5757 MW, with HPPs accounting for 87.6% of the total installed capacity. The share of thermal power plants is 718 MW, i.e. only about 12.4% [2].

The main hydropower potential of the region is concentrated in the Vakhsh and Panj river basins. The largest HPPs in the Tajikistan are Nurek, Baypazin, Sangtuda-1