

Why don't birds die when they are sitting on power lines?

physics homework help

Why don't birds die when they are sitting on power lines? Interesting Facts

The wires in high-voltage power lines are not enclosed in rubber insulation, they are simply fixed on supports with insulators and thus electrically concern only the source and consumer of the current.

However, it is often possible to see the birds sit on these wires. It turns out that the birds are enough for the bare wire in which a huge current flows. So why don't they suffer?

The fact is that when the bird sits onto the wire, then a parallel connection of the conductors is created. One conductor serves the bird itself, and the other is a portion of the wire under the birds. The poultry resistance is many, many times more resistance of the wire, so a negligible current flows on it, which cannot be damaged to her (with a parallel compound, the total current is distributed between parallel sections of the chain inversely proportional to the resistance).

However, the bird can still die when handling high-voltage power lines. To do this, she is enough, sitting on the wire, touch the metal part of one of the supports that hold the wires. These supports are obviously grounded as installed on Earth. In addition, now the poultry resistance is much less than the resistance of the air (with which it in this case creates a parallel compound) Therefore, the current of the current that will go through the bird will be huge. The current of such a great strength literally sees the bird almost instantly.

These rare birds that touched the wires and supports simultaneously are the only victims that the wires in high-voltage lines are not enclosed in isolation, but only isolated from support. In this case, the deaths of birds do not affect the process of transmission of electricity, it is not harmful to him and do not violate. That is why the wires are still and remain without isolation, because it would be very expensive to conclude them and difficult.

In addition, it should be noted that only high-voltage power lines are not isolated from the external environment and air. They are suspended on huge supports very high.

But those wires that diverge from substations to the houses of people, to lanterns and so on in the posts of small height, are already equipped with insulation over the entire length (at least it is provided for by modern electrification technology). In these wires, located at a much smaller height proceeds, by the way, not such a high current, and the tension is less. And since they are

completely concluded in isolation, they are no longer threatened by birds. Although the reason for this isolation of these wires is primarily the safety of people who, albeit with difficulty, but can also enter them into random contact. After all, these wires occur much more often, and they are much closer. Back forward

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