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## Efficiency of rock destruction by a pulse generator based on a linear pulse transformer

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Many researchers around the world note the high efficiency of electropulse drilling. During drilling shallow wells in the tens of meters deep, when the high voltage generator is located on the surface near the well, the specific energy consumption of electric pulse drilling is much less than traditional rotary drilling. To effectively drill deep wells (from hundreds of meters to several kilometers) with this method, it is necessary to develop a compact high-voltage downhole generator. In our opinion, such a generator can be built on the basis of a linear pulse transformer (LPT). In this paper is presented experimental results that show the efficiency of using such drilling system on the example of an existing laboratory bench. The tests were carried out on the rocks close in their physical characteristics, to rocks encountered at great depths. Before testing, rock samples were soaked with working fluid - technical water. As a result, it was shown that the effectiveness of this scheme is not inferior to the previously used Marx generators, however, according to other parameters, such as the mass-dimension parameters, simplicity of design, the LPT generator has unmatched advantages. Also, the obtained results allow us to formulate recommendations for optimizing the generator parameters based on LPT to increase the efficiency of drilling.

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