

## Removal of overhangs in the coal bunker - OP-140 boiler at Power Plant Zofiówka

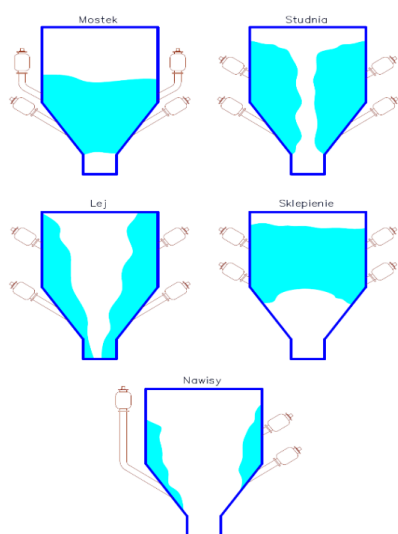
In December 2016 EKOZUB Ltd. Company made and launched "Installation of pneumatic loosening of coal in the boiler tank OP-140 No. 3 in SEJ S.A. Zofiówka department. The installation consists of six pieces of shockwave generators GFU-24/8. Thanks to the work in the full automation of generators, the problem of systematic feeding of fuel to the boiler and even operation of the turbine at constant load was solved



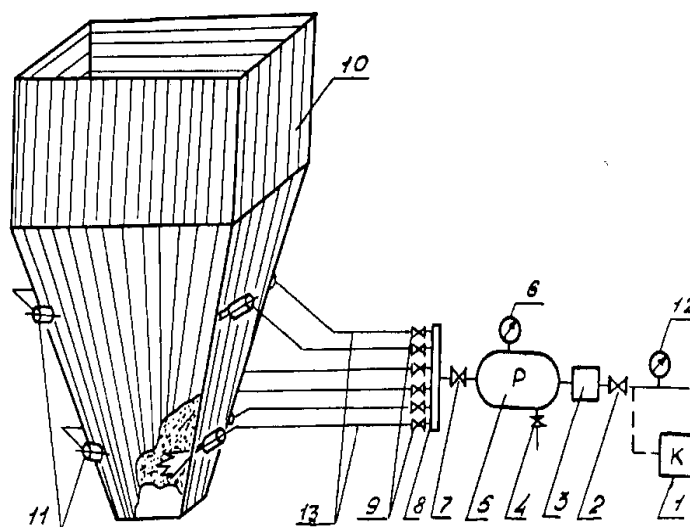
Reference object :

# Removal of overhangs in the coal bunker of the OP-140 boiler - description of technology

The boiler bunker OP-140 is divided into three parts. A snail feeder is installed under each hopper, which moves the coal to the mill. The bunker is topped up most often three times a day. The amount of disposable filling is within  $150 \div 200$  tons. The bunker consists of three funnels. During normal operation, there are two coal mills in operation and the third is a reserve. The height of the bunker is about 12m. The inclination of the bunker walls is relatively large, but even such construction with worse quality of fuel does not protect against the occurrence of problems - with the suspension of coal. On the discussed bunker most often there are so-called „wells” - without external interference it is possible to create a hole with a diameter of about 1 meter from the bottom of the bunker to almost the top. In such situations, the block's service had to remove the remaining fuel by long lances. Often, too the bunker walls in its lower part were hammered by hand. The aim of the "scarification" installation is to maintain the continuity of fuel supply to the mills, and thus to the boiler. So far, it has created large operational problems for the boiler User and also the entire power unit. Frequent suspension of coal in the bunker caused power drops on the turbine, which are registered on a regular basis. Restrictions in fuel feed caused large turbulence - in the turbine operation, and at the same time entailed financial consequences from reduced electric power. Six shock wave generators - GFU-24/8 powered with compressed air - were installed on the bunker. Two generators were placed on each funnel, and the outlet was split into two parts to increase the area of operation. The generators were placed on the nearest control platforms, because they can be separated from the target location of the wave action by several meters without affecting the strength of operation. In connection with the boiler's high demand for fuel and dynamically changing situation, the generators operate at a bunker at a high frequency within  $5 \div 6$  minutes. The working installation of "scarification" largely removed the problem of interruptions in the supply of fuel to coal mills, the whole block works much more stable and almost disappeared in the supply of fuel to the entire energy system.



Forms of loose materials hanging in bunkers and storage vessels



Installation of shockwave generators for removing overhangs in bunkers.