

Reference about the operation of magnetic-impulse installations IM produced by RPE “MITEK” Ltd. on site of wet grinding of “Mykolaiv alumina refinery” Ltd.

At Mykolaiv alumina refinery in the course of tropical bauxites’ processing, on site of wet grinding until fairly recently existed a problem connected with the bauxites supply from receiving hoppers into ball crushers. The uneven supply of bauxite led to technological malfunctions, no-load increase on ball crushers, negatively impacted the number and quality of goods output.

The bauxite as a process raw material is transported to the refinery aboard marine and river vessels. The discharge of bauxites from vessels is carried out by means of grab loader, and then stacking on the ground storage. The humidity of bauxite varies from 9-19%. It arises particular difficulties while being received in the autumn-spring period namely build-up on the hopper walls as the receiving hoppers stay in the open air. When environmental temperature drops in the winter period it leads to freezing of bauxite to hopper walls.

Before introduction of magnetic-impulse installations IM the collapsing was done with water on site. In order to reduce the likelihood of bauxite bridging in hoppers the specialists from the RD department “SB Metallurg” Ltd. were attracted. They together with the specialists of Mykolaiv alumina refinery considered into the offered variants for elimination of the materials bridging in hoppers. They came to conclusion that all the variants considered didn’t guarantee the elimination of bauxite in hoppers. They required additional researches and tests. At the same time the variant with application of magnetic-impulse installations IM, after pilot testing of IM by RPE “MITEK” on the hopper № 8, enables controlling of process aimed at bridging elimination. It was found reasonable to use magnetic-impulse installations IM with vibration sheets attached to the walls inside hopper.

The receiving hoppers on site of wet grinding were equipped with magnetic-impulse installations IM produced by RPE “MITEK” Ltd. and location of 20 executive mechanisms on every hopper. The introduction of installations was preceded by engagement of specialists from RPE “MITEK” along with the RD department “SB Metallurg” Ltd. It meant modification of hoppers’ construction and fitting with vibration sheets where special manner of fastening to the walls was used. In the course of IM mounting the inclined surfaces of hoppers, where the build-up or freezing of bauxite was the case, were equipped with the executive mechanisms of collapsing. This made it possible to get quick and efficient cleaning of hoppers without using of water, manpower as well as eliminating the unscheduled downtime.

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