METHOD OF CONSTRUCTION DISPLAY SYSTEM PROCESS AUTOMATION A PRECINCT CONVEYING

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This article gives an analysis of process automation district conveyor transport. On the basis of the technique of building a data display system as implemented in LabView 11. The methodology includes the development of a virtual tool for the display of process automation district of conveyor transport on the example of the algorithm level monitoring bunker rock.

Cargo traffic precinct conveyor line, the level of loading hopper gate condition, feed hopper.

For the smooth operation of complex production lines, equipment, bathrooms conveyor transport plays an important role for the temporary storage of the material in order to avoid accidents in cases where the temporal characteristics of individual equipment or short-term problems in the continuous transport chain. As the complexity of maintaining automated production lines is primarily due to their considerable length, that there are difficulties in finding places zashtybovki possible. In such situations, a very effective is the ability to monitor the progress of the movement of controlled mass.

The purpose of research - improving the efficiency of the display process freight traffic and filling the intermediate capacity by constructing a cognitive mapping system process automation district conveyor transport.

Objectives of the study. Analysis of the conveyor transport as the automation object, the development of a virtual tool to display process automation and conveyor transport algorithm for tracking changes in the filling hopper.

Materials and methods of research. Currently, almost all conveyor lines in the mines automated. Development of automated conveyor lines of mine for a long

period determined elk need to reduce the complexity of managing and improving without the dangerous operation of conveyor transport. In connection with this widespread automatic control of the conveyor line

technical nature of which is to centralize the management of processes start-stop conveyors, as well as providing automatic protection against the development of an accident in case of emergencies.

The object in question is an automated conveyor-th line (precinct or backbone) with storage hopper-feeder. Precinct conveyor line consists of three conveyor belts type 2A-80U with a length of 300 m each conveyor and belt width 800 mm. Precinct assembly line is designed for the transport of rock coming from the mine site, directly in accumulating feed hopper. As the feed hopper is used bunker type CMM-500 volume of 500 m3. Backbone assembly line consists of two conveyor belts type 2A-100U with a length of 400 m each conveyor belt width and 1000 mm. Backbone assembly line is designed for the transport of rock coming from the feed hopper directly to the loading point.

The principle of operation of the automated system is to follow-present: from the personal computer (PC) Mine Manager signal is 1 on the control panel (PU) system SAUKL №1 to include the main conveyor line. Then, in the same way signal is 2 PU systems such as the inclusion of SAUKL №2 precinct conveyor line. The next step in the process is the inclusion of the work of the unit stabilize traffic. The inclusion of this device comes with a PC controller shaft via RS-485. Then the rock mass 3, coming from a mine site by Precinct conveyor line is transported to the accumulating feed hopper. Under the supports of the hopper-feeder (BP) Install the inverter type TAL, which convert the force of gravity hopper filling his material into an electrical signal. This signal 4 (information on the state of loading hopper) is supplied to the control unit stabilization of traffic, where the signal is analyzed, and the analyzed signal 7 coming from the conveyor scales zabunkernogo main conveyor belt load on the state, and then the command is issued 5 for opening / closing the gate W bunker. Further cargo stabilized backbone 6 via the conveyor line are transported to the loading point. If the level of coal in the hopper has reached an emergency, and the hopper slide valve is fully open, then the stabilization control unit 9 receives the

signal traffic on the control unit of the third conveyor BUK №3 tripping precinct conveying line followed by an alert manager shaft accident.

Findings

1. A virtual instrument (VI) to visualize the techniques of building a system that shows the process of automation of conveyor transport mines.

2. VI allows testing of the control algorithm of the rock mass in the hopper, and the amount of material on the tape zabunkernogo magicians stralnogo conveyor.

3. The algorithm makes it possible to track the changes in the coal bunker, which can be realized by connecting the respective sensors.

4. When dealing with real objects, this algorithm can be used as a standalone system or as part of a similar automated control systems.