

CALCULATION INFORMATION SUBSYSTEM TO THE FUNDING OF SAFETY IMPROVEMENT MEASURES UNITS CONVEYORS

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The proposed information system gives advice to the funding of research, design and commissioning work to improve safety belts assemblies, including tape, based on the probability of creating emergency hazards in pipeline installation. Studied economic efficiency evaluation method based on statistical indicators developed software user interface and database structure input.

Information system, conveyor, safety measures, accidents, finance, probability.

Information subsystem in question is part of the information technology determine the parameters of belt conveyors to prevent accidents. For 70 - 90 years conducted research work on creating methods of designing pipelines, determining their parameters by computer, study design conveyors in terms of safety production, including economic feasibility of the work. In modern science, conducted the development of information systems, computer-aided design, visual programming and display manufacturing processes using conveyor lines.

The aim - automated decision regarding the advisability of measures and funding to improve safety belts nodes, based on the probability of creating emergency hazards in pipeline installation.

The main content of research. Emergency danger conveyor installation can be defined as the sum of the mathematical expectations of emergency situations such initiatives. Past studies can provide such components as Drive Station linear part of the pipeline, suspended matter, ie when the accident at the drive station j -th ($j = 1 \dots n$) causes (zashtybovka, easing tension belts, it increased wear, the late replacement of defective rollers, friction braking devices, motors, bearings, etc.);

Expectation of economic damage per accident for reasons explored and place of work.

Probability of emergency determined by the number of technical problems that can lead to an accident on a conveyor belt or the ratio of the total length of downtime due to technical problems on the conveyor belt to the total time during his work shift (year). It is set on the sample - linear conveyors unified series of this type and is the starting value for ranking causes of emergency.

Based on the statistical data defines the economic consequences associated with fires in mines equipped with conveyor belts. Calculate the expectation of economic damage caused by an accident due to structural deficiencies conveyor belt, equipment management and control of fire protection.

Expert by established part of the economic consequences of fires belt conveyors should be attributed to their structural weaknesses in the considered complex equipment and state mining and

to what extent they will be reduced by the proposed changes or improvements. The share of the economic consequences of accidents for reasons depending on the design point is defined as the product of these factors.

Calculate the expected cost of production of advanced node designs in concrete conditions of its production (3 knots) and costs for its maintenance for the entire lifetime

This cost-effective expenditure on R & D to improve the designs of individual units conveyor installations, equipment management and control it is proposed to determine the formula

This methodical approach allows you to set the maximum allowable expenses for research and design work, and the changeover of production to the production of new or improved components and designs of belt conveyors and additional costs for maintenance, in close conjunction with the end result - the size of economic damage from accidents due to design flaws.

Due to the fact that the economic consequences of accidents depend not only on its causes, but also on resursonasychenosti the fire, and the degree and duration of its liquidation required selective approach to the practical application of the proposed improvements based on costs incurred and the possible significance of economic loss.

The analysis showed a lower probability of fire on existing conveyor installations in coal mines and a wide range of significant economic losses from their predominance in the main trunk workings. In this connection, it is proposed to differentiate conveyor installations largest possible economic consequences as follows:

- in the workings serving mine, block, wing horizon in case of fire in them, workers are exposed to danger and wealth, located in several mining districts and numerous workplace obschshahtnoy production processes. This group includes okolostvolni yards, capital crosscuts, main drifts, incline, slope, group teams drifts;

- in mines, serving a mining area with surrounding her preparatory faces. Depending on the number of employees (in two related changes) and valuables they can be identified subgroups up to 20, 20-40 and over 40 employees. As for wealth, the high inflation, frequent indexation of fixed assets and contractual prices for the materials used need to install a range of subgroups when making decisions;

- other workings of fires that create a danger to workers at the mine and loss of property.

Depending on the costs of the improvements nodes belt conveyors, given limited investment opportunities in these goals, set priorities as design and technological development and equipping of conveyor installations in different groups making.

View window MS Access database input information "expectation after fires" /

Conclusion

The stated methodical approach will cost reasonably decide the priority of design and development work on the improvement of individual units belt conveyors and allowable costs

incurred. The information system which automatically on the basis of statistics gives guidance to researchers regarding the advisability of further work to reduce the accident rate of production.