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SYSTEM APPROACH TO SELECTION OF A NEW TRANSPORT MEANS FOR WORKING IN DEEP MINES

ADAMCHUK Andrii¹

¹Dnipro University of Technology, Dnipro, Ukraine

Purpose. To develop a methodology for a sufficient justification of the parameters of prospective transport means for using in conditions of surface mining of mineral deposits at deep mines and calculation of economic effect from implantation of new technological solutions.

Methodology. The research are the reviewing and systematizing the experience of using known transport means for surface mining operations, analyzing a number of approaches to their selection and theoretical substantiating of a new methodology taking into account the key technological parameters of surface mining and technical and economic indicators of mining transport systems.

Findings. The classification of transport means for using in conditions of surface mining of mineral deposits is presented according to the degree of prevalence, experience of use and implantation into industry. There are three groups of transport means: common, minor and prospective. Various approaches to the justification of the mining transport systems, taking into account the units of which include equipment from the various classification groups are proposed. A new methodology of assessing the benefits of new transport means, based on the methods of the system approach, analogies, technical-economic analysis and logical engineering solutions, is developed. There are three conditions for transition to a new transport mean: economic, technological and ecological.

They contain the researches, which were conducted within the project GP – 505, financed by Ministry of Education and Science of Ukraine.

Key words: mining, deep mine, system approach, method of analogies, technological transport parameters, surface mining of mineral deposits, technical and economic indicators

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THE REVIEW ON INTERNATIONAL PRACTICES OF THERMAL ENERGY RECOVERY AT CLOSED MINES

RUDAKOV Dmytro¹ & INKIN Oleksandr¹
¹Dnipro University of Technology, Dnipro, Ukraine

Purpose. Comparative study and efficiency analysis of operating geothermal systems installed in different countries to recover heat from mine water and rocks in post-coalmining areas.

Methodology. The research methods included collecting, systematizing and analyzing of actual data on the principles, designs, features, and performance indicators of open and closed geothermal systems operated at closed mines in different countries currently introducing advanced technologies of alternative power generation.

Findings. In line with the UN Convention on Climate Change, the world and Ukraine are reducing the share of coal industry, which makes topical introducing