

ABSTRACTS

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CYCLIC PHENOMENA IN URANIUM MINING INDUSTRY IN UKRAINE AND THEIR ANALYSIS

Theoretical and methodological approaches to cyclic development of industry are considered. The cycling of uranium mining development is shown at Eastern Ore Dressing Complex since 1951 through 2013 and the outlook for mining through 2020 is pointed out.

As far as there is not analysis of the cycling in literature, the periods of increase and declines in mining production are studied.

Taking into account low uranium content in the ores of the explored deposits of Ukraine, the grade in crude ore, which is expedient to process at the Hydrometallurgical Plant, is determined. Dependence of production costs of payable ore on the output of the crude ore mined, uranium content in it, as well as losses during radiometric concentration are determined. The dependence diagrams of ore mining production costs on the factors listed above are plotted.

Taking into account influence of different factors on the ore mining production costs, correlation-regression analysis is performed, on the basis of which a model enabling estimation of uranium grade in the ore of the Smolins'ka mine, is plotted.

The results obtained will be taken as a basis of estimation of economic feasibility of the ore mining at the Novokostyantynivs'ke deposit. Currently, the approach suggested has been put into practice while grade in the ore mined at the Inhul's'ka mine being determined, that has enabled to avoid the cyclic loading during ore processing at the Hydrometallurgical Plant and to cut production costs of triuranium octoxide.