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Selective Technology as New Philosophy of Coal Extraction

Demand for raising efficiency of underground coal extraction from flat thin seams is one of the most actual problems of coal extraction branch of Ukraine. According to expert estimates, workable coal reserves will be sufficient for 150-200 years based on calculation of annual average productivity equal to 100 million tons. However, nearly 70% of these reserves occur in seams with thickness of 0.5-0.8m. Coal in Ukraine is mainly extracted at Western Donbass mines.

At present one of the most actual problems during coal seams development is the issue of induced coal-cutting with stone from wall rocks, which results in coal getting filled with rock and turning into rock mass. All mines of Western Donbass produce coal with ash average content of 31-49%. In other words, if we redistribute extraction between Western Donbass coal enterprises it turns out that 7 out of 10 mines of «DTEK Pavlogradugol» extract coal while 3 out of 10 extract rock.

Selective mining can become a solution to this problem, as it allows involving reserves with unconventional thickness that are on the mine balance-sheet. Implementation of new technology allows to resolve complex issues of coal quality increase, maintenance, support, reuse of mine workings, goaf stowing and so on.

Below are listed the main advantages of the considered technology:

- ✘ implementation of selective technology decreases the quantity of transported rock by 25% (as ash content of extractive coal during complete mining equals to 40% while during selective one only 13-15%);
- ✘ there is no need in rock transporting by locomotive transport as rock stays in mine;
- ✘ there is no need to transport rock mass to treatment plant;
- ✘ there is no need in coal dressing because extracted coal ash content is 13-15% and many other advantages.

As of today, separate extraction of coal and rock has accumulated positive experience. At «Nadiya» mine selective technology is implemented in a separate unit, where perspective and economic advantages of its using are proved.