

## **New hydro-technology opens it's own way.**

The Kuzbass, first of all is a coal territory. And many social and economic problems are connected mainly for the sake of the coal branch. It is worthwhile to mention at least some events of the recent past, among which were strikes, hunger strikes, rail wars, which showed that there are still numerous problems in the coal branch of Kuzbass. Many miners today continue to disturb the questions: what will be further? In what a way will go miners? The chiefs of the enterprises don't think about it, they continue to search for most convenient and acceptable ways for their enterprises based on the difficulties of economic and social nature. Forty years All-Russian scientific- researching and design institute "Hydro-coal" has been developing the mining technology using the water. During the years scientists felt joy of successes and met defeats. There was everything. There was no just the one: a recognized, proven by concrete practice method of operation, which was accepted as by private miners, and by coal "generals, by the elites of scientific forces and by the administrative officials of a very high rank.

Now this method exists: it is tested in the scientific laboratories and in the underground faces, the positive effect of economic and technological nature is got.

The discussion deals with the new mechanical-hydraulic technology, developed by the group of scientists under the guidance of the "Hydro-coal" director, the doctor of technical science, Professor Arkady Anisimovich Atrushkevich. Many of us know what is the traditional coalmining way. This is very expensive industrial production of technical and production structures. It consists of a concentrating plant, conveyer lines, sinking and cleaning complexes, the large number of working and engineering personnel, everyday, washing rooms and so on.

But what is the new hydraulic technology, proposed as far as by professor Atrushkevich and his command of scientists? Just imagine a small production room for the miners beyond the surface, and in essence all. But under there are coal layers. A heading-and-winning machine HWMA-3M (modernized) works in preparatory and cleared faces. There was special conversation about this equipment. In the world practice this machine does not exist. Down the metal platform is set the working part of a series upland heading machine UHM and a conveyer of water supplying in the coal destruction zone. Relying at the edged rises the machine moves up through a layer to the thirty-degree bedding. It is smoothly moved to the right - to the left. It moves back and as a mechanical mole, breaks coal around itself. Usually only two people work there: an operator and a worker. The water going across the plastic pipes in this case has several functions in the face: it takes away repelled coal, suppresses dust and methane. They say that all genial is simply. And in fact, it's very hard to develop the equipment simpler than this.

Another important significance of the new technology - the underground enrichment. Repelled by combine coal raises and without the additional processing is directed to by-product plants. The mined fuel without the reclamation the Kemerovo by-product plan takes. Refuse stone during the coal and water moving is held up in the face and there is no any piece the earth's surface. Ecologists are very happy to the work of miners.

The scientists of the "Hydro-coal" institute have changed in the root the traditional technology that is usually very hard in the mining of large coal layers. Rapid layers for them are a "bread". And it should note again that coalmining enterprises with the rapid coal incidence using this technology have a decided advantage.

Here is the technology. It is simple, accessible, and the main thing, it is cheap. Therefore financial expenditures require an additional apportionment. The absence of the concentrating plant gives approximately 80-100 rubles of a saving per each ton of mined coal. The ton of concentrate "dry" coalmine is cost much more expensive, than with the using of hydro-technology.

There is one more, very large plus in this technology - capital costs. It needs about less than 20 million rubles to put in for the mining in 20-30 thousand tons of coal per month using this technology. It's just a 1\6 part from the Russian mechanized complex and transport costs for the face of the coalmining enterprise. In this case the discussion does not deal with the foreign

complexes like “Joey”, “Pioma”, “Glink”, which cost not millions of rubles, but millions of dollars. However, the equipment in the new technology of hydraulic coalmining, including HWMA-3M (modernized) machines, dehydrate machines, cascade water supply systems, means of roof bolting and all types of new glass-plastic counters, can be made at the Kuzbass Machine Building Plants, including at the Chernyh plant also in the machine work-rooms of the “Zyryanovskaya” coalmining enterprise, the experimental plant of the “Hydro-coal” institute, Kuznetsk Machine Building Plant and a number of others. It’s very cheaply and it gives additional work sites.

Many problems of mining enterprises are concealed in the insufficient financing.

Unfortunately, a state can't give finances to unprofitable coalmines.

But the new hydraulic technology, developed and the "Hydro-coal" institute can help these coalmining enterprises independently, without the large money investments to conduct technical reequipping and rapidly get the it's feet. The prime cost of the coal ton mining this way is very low, capital expenditures are also low. Taking into account these circumstances, some mining enterprises do not wait grants from the state, but they start the reconstruction coalmines by their own forces and their transfer beside the new hydraulic technology. Among these are “Kiselevskaya”, “Anzherskaya- southern”, “Krasnokamenskaya”, hydro direct “Highland -2 “, "Anniversary", in the Kuzbass. The miners of other regions interested in this coalmining enterprises experience, especially the “Izykhskiy” cut in Khakassia and in some coal enterprises of Seaboard.

We can't say about the adherence of many workers to the new hydraulic technology in the coalmining. These examples are evidence that in Kuzbass and far beyond its area there are more and more such chiefs. Well. However, what do theorists and scientists say about the "Hydro-coal» institute’s new technology?

- Unfortunately, - the doctor of technical science, the professor of Siberian state industrial university Victor Fryanov says, - some fate is near this technology. Vladimir Semenovich Muchnik, the professor, dedicated his life for this technology and made a lot for it as its ancestor. Alexander Yegorovich Gontov, the general director of the "Hydro-coal" also advocated it. And also could not make a mash on the conservative supporters of the traditional dry mining. It should be noted that the fundamentally new scientific and technical base of professor Atrushkevich is very different from the other versions of coalmining and must obtain wide industrial application. However, it still doesn't work, something is wrong although this method has already been tested in practice and the possibilities are proven. I think, we have to solve these problems at the state level. The new method of coalmining must be priority especially in those areas, where closings of many coalmining enterprises are planned and, which means, strongly social stress. But here is necessary the help not only of provincial administration, and also government structures, the process of introduction will be retarded without them.

Vitautas Seikus, the professor of the Novokuznetsk institute- branch of the Kemerovo State University says:

- As a head of ecology department, in the new technology I especially like its possibility not to violate the nature purity. Underground enrichment and the dehydration are when there are any refuse in the coalmine and any liter of dirty water in the dewatering box, but beside the sump - not one liter of dirty water, can it be the proof of the uniqueness this new technology?

The first and very confident steps in the introduction of the new hydro technology in the coalmining in Kuzbass have been done. Scientists are grateful to the governor, A. G. Tuleev. He helped to carry out this question down the visiting session of the Russian Federation government in the Kemerovskaya province. He named the technology as “breakthrough”. Precisely there the former Prime Minister Primakov showed a great interest in the development of "Hydro-coal" scientists and directed it to the minister of Mintopenergo, to Mr. Generalov to render concrete assistance in the introduction of it.

Everything new always opens a way to the life very hard. There is no doubt that hydro technology, developed by the "Hydro-coal" scientists under the guidance of professor Atrushkevich will move in the wide main way in the coalmining.  
Mikhail Ershov.