

## CHRONICLES

### OUTLOOK ON MINES OF THE FUTURE

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In October 1965, a scientific conference was held at Novosibirsk on problems of mines of the future. This conference was organized by the Mining Institute of the Siberian Branch of the Academy of Sciences of the USSR, the "Sibgiroshakht" Institute for Pit and Beneficiation Plant Planning, and the Eastern Siberian Administration for Scientific and Technical Society (Mining). The participants included about 200 people from Moscow, Kiev, Khar'kov, Karaganda, Dnepropetrovsk, Donetsk, Kemerovo, Prokop'evsk, Novokuznetsk, and other Soviet towns.

Among the principal reports was one from Associate Member of the Academy of Sciences N. A. Chinakal, entitled "The Mine of the Future," one from Dr. Tech. Sci. V. S. Muchnik, "The Hydraulic Mine of the Future, exemplified by the construction of a new Siberian High-Productivity Hydraulic Ore Mine, the 'Raspadskii'," one by Cand. Tech. Sci. M. M. Savkin, "Automation and Mechanization in the Mine of the Future," one by Associate Member of the Academy of Sciences T. F. Gorbachev, "On the Problem of the Mine of the Future (from experience of Foreign Mine Construction)," one by the Director of Sibgiroshakht, N. E. Zarankin, "New Process Techniques for Coal Pit Planning," and others.

In discussing the reports, A. A. Tuchnin (Dneprogiproshakht) remarked that even now the necessity has arisen to reorganize the work of planning organizations in such a way that their projects shall be appropriate to the state of the art in 1980. A. P. Mogilko (Yuzhgiproshakht) said that problems of mines of the future should be systematically worked on by construction and research organizations. Experimental pits must be sunk in the main coalfields. N. I. Lindenau (VostNII) said that a future mine must not only have high productivity, but also be comfortable to work in. For the conditions of the Kuzbass field, in newly planned mines we must allow for localization of gas-dynamic phenomena which are typical for depths of 500-600 m, at which these pits will be working after 15 years. M. S. Akaev [IGD SO AN SSSR (Mining Institute of the Siberian Branch of the Academy of Sciences of the USSR)] confirmed that when speaking of the mine of the future we must also have in view open-cut mines. N. G. Dubynin (IGD SO AN SSSR) confirmed that future mines will require qualitatively new technological processes, which must be continuous. V. D. Rechin (VNIIGidrougol') spoke of the adoption of hydraulic pits in the Kuzbass field. An important problem here is the construction of robot machines with programmed control, and the organization of the collection and processing of information. In the opinion of F. B. Tseitin, to solve the problem of the mine of the future, a mechanical engineering base must be set up in the Kuzbass. I. S. Peshkov (Sibgiroshakht) stated that planners daily meet with a number of difficulties due to the lack of scientific solutions of problems in important branches of mine planning. This explains the subjective approach taken to the main problems of planning. D. L. Garbuz (UuzPI) and D. T. Gorbachev ("Kemerovougol'" Trust) gave a thorough analysis of the power basis of pits and mines in the Kuzbass and the need to choose compressed air for deep mines, rather than electrical power.

I. G. Chernov (IEOP SO AN SSSR) spoke on the problems of improving working conditions and rest periods for workers in the pits, the organization and control of enterprises, and materials and equipment. Prof. P. T. Prikhod'ko (IGD SO AN SSSR) said that a very urgent problem is the organization of anti-silicosis precautions. In coal pits it is necessary to force water into the rock and to purify the pit air from dust. M. M. Savkin (IGD SO AN SSSR) said the the pit of the future will have new technological principles, a new organization of production, and a new role for men in this process. This problem must be attacked with the participation of physicists, chemists, mathematicians, thermal engineers, and biologists, working together with planners and specialists.

The conference agreed to ask the Mining Institute of the Siberian Branch of the Academy of Sciences and other departments to organize research on the problem of the mine of the future in Siberia and the Far East.

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