

course, is to develop prospects to a certain point where there is a fair chance of making good, by a syndicate or a development company. Mr. Marriott, when commenting on the fact that there are so few mining properties sufficiently developed to attract his company, said: 'What you need here is a few good development companies.'

After a few further observations by Mr. Hedley, a discussion ensued, in which Mr. H. M. Ridge (who gave the meeting information relative to some of the disadvantages that had followed the passing in Great Britain of laws intended for the protection of the public from abuses in connection with company promotion), and Messrs. Kiddie, W. F. Robertson, E. Jacobs, and others.

Reading of Papers.

Papers were read, as under:

1. "Early Slocan Days," by Prof. J. C. Gwillim, School of Mining, Kingston, Ontario.
2. "Notes on Minerals Found in Slocan District," by Wm. Thomlinson, New Denver, B.C.
3. "Notes on Geology and Ore Deposits of the Slocan," by O. E. LeRoy, of the Geological Survey of Canada.
4. "Costs and Cost Conditions at the Blue Bell Mine, Kootenay Lake," by S. S. Fowler, Riondel, B.C.
5. "The Lucky Jim Zinc Mine, Slocan, B.C.," by A. J. Becker, superintendent.

There was also some discussion on the present position of the zinc ore reduction question in British Columbia, in connection with which reference was made to W. R. Ingalls' paper on "The Problem of Mixed Sulphide Ores."

ROTARY CONVERTERS FOR MINING SERVICE.

Rotary converters are being used in many coal and metal mines. Direct current is necessary for the operation of mining locomotives because alternating current motors cannot satisfy the speed and space requirements. Alternating current is used for the transmission of the energy from the steam or hydro-elec-

ing companies find it economical to establish steam or hydraulic generating stations at points where energy can be generated cheaply and to transmit it as high tension alternating current to the mine or group of mines where it is utilized. Whether alternating energy is generated by a public service company or by the mining company, experience shows the rotary converter to be an efficient, reliable machine for converting the alternating to direct current. A nominal voltage of either 275 or 600 is adopted for the direct current distribution systems within the mines.

A good example of a mining plant rotary converter installation is shown in fig. 1, which is a view of the substation at Mine No. 22 of the Consolidated Coal Company of Pennsylvania. This station received energy as alternating current at 2,300 volts, three-phase, 60 cycles. The pressure is stepped to 158 volts for the alternating side of the Westinghouse 150 k.w. rotary, and is delivered therefrom as direct current at 275 volts. A standard Westinghouse black marine finished switchboard, carrying the usual switch gear and instruments, controls the incoming alternating current line, the rotary converter, and the outgoing direct current feeders, which radiate to different parts of the property.

In large mines it is sometimes expedient to locate rotary converter substations underground near the centre of the area that they serve. Such an underground substation of the Consolidated Coal Company is shown in fig. 2. The room forming the station is lined with brick, which is waterproofed on the outside, and the roof is arched so that it will drain and that dripping water cannot damage the apparatus. The incoming lines to this station are alternating current, 2,300 volts, three-phase, 60 cycles, and the 150 k.w. rotary converter delivers direct current at 275 volts. The transformers stepping down from the alternating transmission voltage of 2,300 to the alternating rotary voltage of 158 are located in the substation. (See fig. 2). A pipe frame work arranged over the high tension transformers supports the high tension bus-bars. A two-panel black marine finished switchboard carries the equipment for metering and

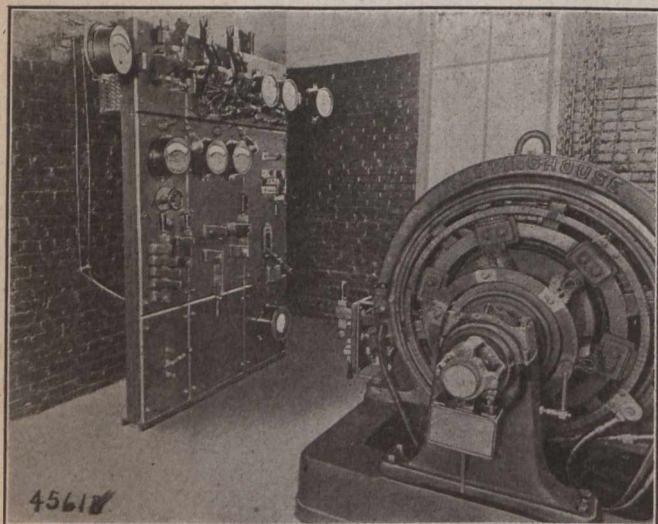


Fig. 1

tric generating stations to the mines, and the rotary converter is the logical machine for efficiently converting the alternating to direct current at the point where the energy is to be used.

Several public service companies in both Pennsylvania and in Colorado are making a specialty of supplying mines with alternating current energy and are developing excellent mining loads. The larger min-

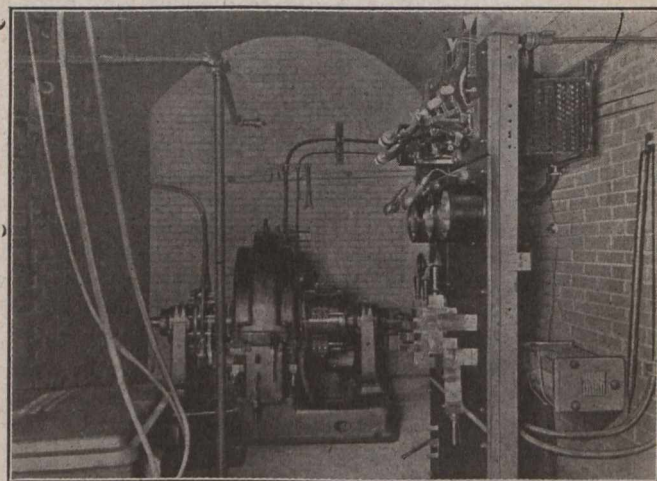


Fig. 2

controlling the incoming and outgoing lines, the transformers, and the rotaries.

Armored lead-covered cables are generally used to convey the high voltage energy to an underground substation in a mine. The cable is usually carried down a bore-hole rather than through the workings, so that the chance of injury from falling rock and from interference will be minimized.