The Canadian Engineer

VOL. X.—No. 3. TORONTO AND MONTREAL, MARCH, 1903. PRICE 10 CENTS $1.00 PER YEAR.

The Canadian Engineer.

ISSUED MONTHLY IN THE INTERESTS OF THE

CIVIL, MECHANICAL, ELECTRICAL, LOCOMOTIVE, STATIONARY, MARINE, MINING AND SANITARY ENGINEER, THE SURVEYOR, THE MANUFACTURER, THE CONTRACTOR AND THE MERCHANT IN THE METAL TRADES.

SUBSCRIPTION—Canada and the United States, $1.00 per year; Great Britain and foreign, 6s. Advertising rates on application.

OFFICES—Cor. Church and Court Sts. Toronto ; and Fraser Building, Montreal.

Toronto Telephone, Main 4310. **Montreal Telephone.** Main 2589.

BIGGAR-SAMUEL, LIMITED, Publishers,

TRAVELING REPRESENTATIVE: A. W. SMITH.

All business correspondence should be addressed to our Montreal office. Editorial matter, cuts, electros and drawings should be addressed to the Toronto Office, and should be sent whenever possible, by mail, not by express. The publishers do not undertake to pay duty on cuts from abroad. Changes of advertisements should be in our hands not later than the 15th of the preceding month or if proof is desired, 4 days earlier.

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The articles now running in the Canadian Engineer on the Electrical Power Developments of Canada, will be reprinted in book form, with diagrams and folding plates. Price $5.00 per copy Advance orders received.

Subscribers who intend binding the last volume of The Canadian Engineer, and who require a copy of the index, will please advise us at once.

THE KOOTENAY-ROSSLAND POWER TRANSMISSION.*

BY GEO. P. LOW.

The Rossland Sub-Station.

The transmission lines enter the sub-station at Rossland through portholes lined with eight-inch terra cotta piping similar to those provided at the power house. As one enters the door of the sub-station, the standard General Electric lightning arresters used are placed on a marble board in a corner at the left, as shown in the floor plan. The choke coils used are an innovation in that each consists of a core twelve inches or so in length turned in the centre of a stick of kiln dried and well filled timber about five inches square, by from six to eight feet long. About this core insulated wire is wound until the space is filled so that the choke coil thus formed resembles an exaggerated form of spark coil with its terminals carried out to the respective ends of the timber on which it is wound, these timber ends being strapped to the top of high tension insulators through which the choke coil is cut into the line. Such choke coils are placed in every line, not only at the sub-station but at every power service. The sub-station contains twelve 250-kilowatt step-down transformers. The line wires are carried to the high tension switchboard at the rear of the station on high tension insulators supported by framings that hang from the roof girders, and the usual facilities are provided to afford safety and celerity in the handling of both the high and low tension sides of the transformers. These latter are of the same type and size as those installed at the power house, with the exception that the primaries take either 9,600 or 16,600 volts, according to whether connected in delta or Y, while the secondaries deliver 2,200 volts in three-phase current, which is the potential used on all the lighting and power distributing circuits in and about Rossland.

Here may be explained the very meritorious method which the electrical engineer of the West Kootenay company has devised for applying the air blast to the transformers at the power house and at the Rossland sub-station. As in the power house, the blast is supplied by three 60-inch blowers each driven by belting from a two horse-power 100-volt induction motor. Instead of carrying this air blast to the transformers through small air ducts, as is usually done, the engineer has provided subways large enough for a man to enter and move about in. Each week the transformers are cut out of service one by one and the air ducts in them are examined and cleaned by a man who enters the subway in order that he may have access to the lower end of the air ducts in the transformer. His work in cleaning the transformers is facilitated by the use of compressed air, which is obtained in both the power house and the sub-station from a single drill compressor driven by an induction motor. It is safe to say that so long as this method of transformer examination and cleaning is faithfully carried out the Kootenay transmission will never lose a transformer from the choking of its air ducts. Slides for regulating the amount of air to be delivered to each transformer are provided and of course the subway is always air tight and the man who cleans the transformers is under the increased atmospheric pressure of the air blast while at his work.

All the electric lighting in Rossland, in both arc and incandescent services, is rendered from alternating circuits, and indeed the only use to which direct currents are put in the Kootenay plant is for the excitation of generators and synchronous motors. The electric lighting load reaches a maximum of nearly 400

*Concluded from February issue.