August 14, 1907

THE ELECTRIC PLANT AT EAST TORONTO

In the summer of 1904 the Corporation of East Toronto, Ont., decided to build a power house and install an electric plant. The power house, shown in the accompanying illustration, is a brick structure, and the electric plant contained therein serves the purpose of supplying both light and power, the water-



POWER HOUSE, EAST TORONTO, ONT.

works system being operated by electricity. The consulting engineer for the work was Mr. John Galt, of Toronto.

The engine is a single cylinder non-condensing Goldie Corliss engine, built by the Goldie & McCulloch Company, Limited, Galt, Ont. The diameter of the cylinder is 17 inches and the stroke 30 inches. The engine runs at a speed of 120 revolutions per minute. The rated load of the engine is 225 indicated horse-power, but owing to the double eccentric type

In the summer of 1904 the Corporation of East of valve motion the engine is capable of carrying an overload of 60 per cent. above its rated capacity.

The engine is fitted with the Rites inertia governor, which is specially adapted for running high frequency alternators in parallel, and the flywheel is of sufficient capacity to enable the generator to be run in parallel with another 60 cycle machine. The field of the generator is mounted directly on the engine shaft, which also carries a pulley from which the belted exciter is driven.

The generator, which was furnished by the Canadian Westinghouse Company, is a 150 kw. 2,200 volt 3 phase 60 cycle revolving field machine, operating at 150 revolutions per minute. It has 48 poles, and the frequency is 7,200 alternations per second. The exciter is a 15 kw. 125 volt direct current multi-polar compound wound generator operating at 1,050 revolutions per minute. The switchboard is of blue Vermont marble, containing the usual instruments. The original installation comprised three transformers, 7,200 alternations, 2,080 volts primary, 575 volts secondary.

The turbine pumps and motors were furnished by the Canadian General Electric Company. There were in the original installation two 6 inch 3 stage turbine pumps, each having an easy capacity of 660 gallons per minute when operating against a pressure of 100 pounds per square inch. Each pump is direct connected to a 60 horse-power alternating current motor of suitable speed to operate the pumps against the desired head at maximum efficiency. When operating under exact conditions, as stated, the commercial efficiency of the pumps is guaranteed to be not less than 75 per cent.

The water tower, shown in the illustration, was furnished by the Canada Foundry Company. It is a steel tower with tank, the top of the tank being 120



VIEW OF ENGINE AND GENERATOR, EAST TORONTO MUNICIPAL PLANT.

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