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OSHAWA SUB-STATION OF THE ELECTRIC POWER CO.

DESCRIPTION OF THE AUXILIARY POWER PLANT AND SUB-STATION AT OSHAWA, ONT., AND OF THE LARGEST DIESEL OIL ENGINE IN OPERATION IN CANADA.

THE Electric Power Company, Limited, have recently erected and equipped a sub-station and power house in the town of Oshawa, Ont. The power house, to which special reference is made in this article, will be used as a stand-by, to supply light and power to the towns of Oshawa and Whitby in case of trouble or breakdown on the company's high tension transmission lines. The company have an extensive light and power system in the Trent valley, with generating stations at Trenton, Frankfort, Campbellford, Healey Falls, Peterborough and Fenelon Falls. The new Oshawa plant is connected thereto so that it may be immediately thrown into commission to feed back upon the line in case of a shut-down at any point west of Port Hope.

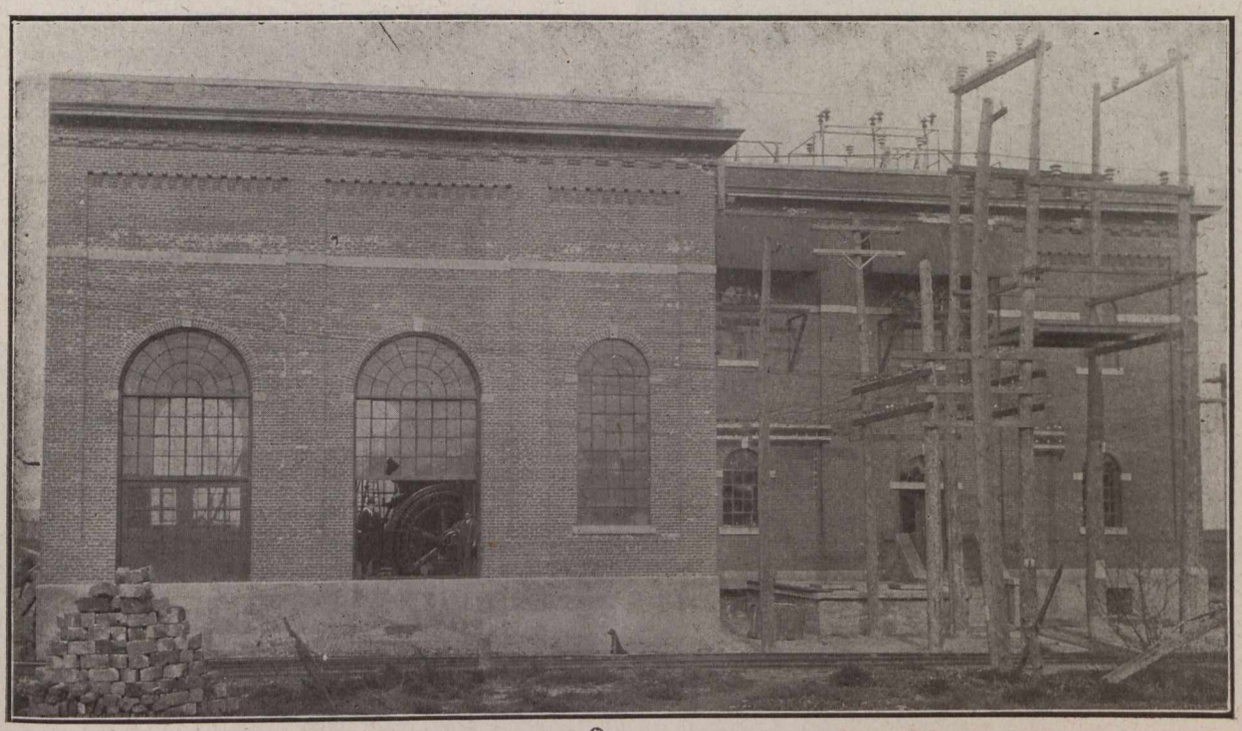

Fig. 1.—Exterior View of Power House and Sub-station.

Layout of Building.—The power house and sub-station are housed in an L-shaped building, shown in Fig. 1. The power house is approximately 50 x 52 ft., and the sub-station, containing two rooms, for the switchboards and transformers respectively, measures about 62 x 36 ft. The entire building is of fireproof construction, being of steel framework encased in brick with concrete foundation. It is equipped with steel sash, reinforced concrete floors, and a concrete roof supported by trusses and I-beams. At present the north end of the building is temporarily enclosed, pending an 80-foot future extension.

Power House Arrangement.—A portion of the power house section of the building is shown in Fig. 2. It consists of one large room, to the lighting of which special attention has evidently been paid, steel sash windows extending well towards the ceiling. The room contains one Diesel engine unit of 615 b.h.p., to be described later. The foundations are already in place for a second engine, and provision has been made in the layout for four additional engines, making a complete stand-by station of six units within the building, with all the usual auxiliaries, the yard being laid out for three cooling towers, each tower serving two engines, and six oil tanks of 10,000 gallons each, only one of which is as yet in place.

Rapid transfer of the oil from tank cars on the power house siding to the main tanks is obtained by a motor-driven centrifugal pump in a small adjacent pump-house. From the main tanks the oil is pumped by a motor-driven rotary pump to two auxiliary tanks, each of 400 gals.