

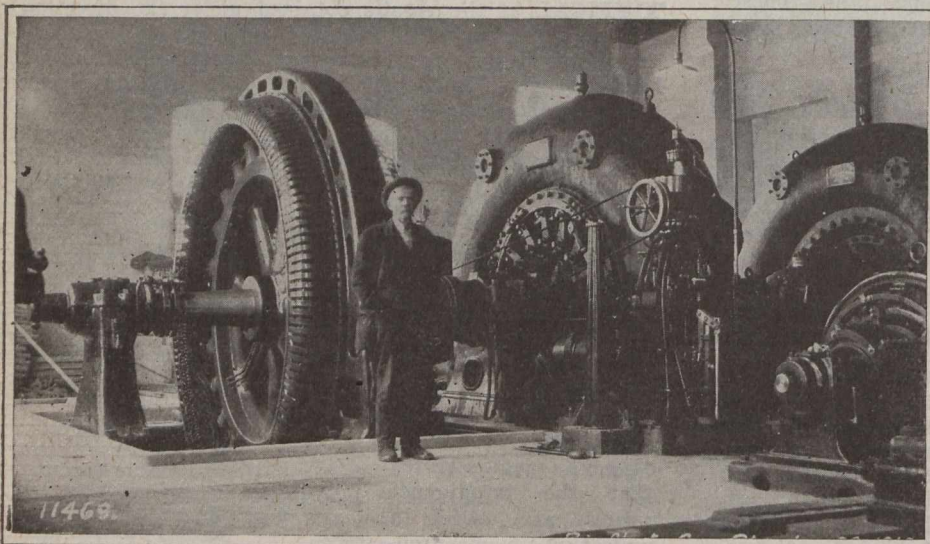
## BIG CHUTE GENERATING STATION

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IN the fall of 1909, the Simcoe Railway and Power Co., commenced a development on the Severn River at Big Chute, which is situated about nine miles from the point where the Severn River empties into Georgian Bay (see accompanying map). By May, 1911, three 900 h.p. units were installed ready for operation. The Simcoe Railway and Power Co. transmitted power at 22,000 volts to their substation at Midland. From this station it was distributed at 2,300 volts to the municipality of Midland. This company also proposed to distribute power to any place in the Simcoe County and Muskoka District.

In 1911, the Hydro-Electric Power Commission of Ontario contracted to take power from the Simcoe Railway



INTERIOR VIEW OF POWER HOUSE, SHOWING UNIT No. 4

and Power Co., and in May, 1911, power was delivered to Midland, and in November to Penetang.

In October, 1911, the load on this Big Chute generating station was 350 h.p.; in September, 1912, 550 h.p. In 1913 the number of municipalities supplied by the commission increased from two to seven; besides Midland and Penetang, there were Collingwood, Barrie, Coldwater, Elmvale and Stayner. The demand in October, 1913, was 1,233 h.p.

Up to 1914 the Simcoe Railway and Power Co. owned the Big Chute generating station, the transmission lines to Midland and the Midland station, also a station and distribution system in Victoria Harbor, whereas the Hydro-Electric Power Commission owned the remaining transmission lines and stations. In 1914 the Hydro-Electric Power Commission purchased the Simcoe Railway and Power Co., and first operated same on July 1st.

In 1915 Waubashene and Port McNicoll distributing stations were installed and fed from this system. In 1916 Port McNicoll (Canadian Pacific Railway) and Camp Borden stations were added. In 1918 Alliston, Beeton, Bradford, Cookstown, Thornton and Tottenham were included in the municipalities fed from this system. In December, 1918, the power demand on this Severn system was 6,350 h.p.; of which 3,700 h.p. was supplied by the Big Chute station and the remaining 2,700 h.p. was supplied by Eugenia and Wasdell's systems.

In 1912 a 22,000-volt transmission line was installed by the Orillia Light and Power Co. between Big Chute generating station and their Ragged Rapids generating station, for interchange of power. This tie line has since been purchased by the commission and connected to the Swift Rapids

generating station, which replaced the Ragged Rapids station. In 1917 the Severn system 22,000-volt transmission lines were connected to Eugenia system at Collingwood station. The Wasdell's Falls system has a 22,000-volt line connected to the Orillia Water and Light Commission's system at Orillia. Thus the Severn system is connected to the Eugenia and Wasdell's systems and also the Orillia Light and Power Co.'s system, and allows for an interchange of power, which enables the commission to meet the increased demand and to provide first-class service with regard to character and continuity.

The original power development as installed under the supervision of the engineering firm of C. H. & P. H. Mitchell in 1909, 1910 and 1911, was described in *The Canadian Engineer* for June 20th, 1912, page 830.

There was the canal entrance, canal about 500 feet long, forebay and one steel penstock 9 ft. in diameter. The penstock is carried on several concrete piers for about 150 ft. down the slope, and turns along the rear of the power house, terminating in a surge tank extending to an elevation 4 ft. above that maintained in the forebay. No. 1 and No. 2 turbines are connected with the penstock by diverging feeders and No. 3 is connected to the Y connection.

The general works and power station were constructed by Pratt & MacDougal, of Midland. The turbines were built by Wm. Hamilton Co., of Peterborough, and are of the Samson type, each designed for 1,300 h.p. capacity at 56 ft. head and at 300 r.p.m. The exciter turbines have a capacity of 200 h.p. under 56 ft. head at 580 r.p.m. The hydraulic turbine governors are all of the Lombard oil-pressure design.

Practically all the electrical equipment was manufactured and installed by the Canadian Westinghouse Co. There were three 900 k.v.a., 2,200-volt, 60-cycle, 3-phase, 300 r.p.m., revolving-field generators.

There were two turbine-driven exciters, each 100 k.w., 125-volts, controlled by a Canadian General Electric Co.'s regulator. There was one bank of three 600 k.v.a., 2,200-25,000-volt, single-phase, 60-cycle, water-cooled transformers. A second bank of similar transformers was installed in 1912, in the same pocket as No. 1 bank, the first bank being rearranged.

The switchboard gallery extends 6 ft. into the generator room, while behind it is the 2,200-volt bus and switch struc-

