

APPENDIX

a 600 K.W., 3 phase, 60 cycle generator, the latter each having a 60 K.W. belted exciter. The turbines are regulated by oil pressure governors.

SEVERN SYSTEM.

Big Chute Development.—This development is situated on the Severn River at Big Chute, 9 miles from the mouth of the river. It was built in 1909, by the Simcoe Railway and Power Company and purchased by the Hydro-Electric Power Commission in 1914. The development then included three units having a total capacity of 3,300 horse power served by one penstock. The Commission has recently developed the full capacity of the plant by the addition of a second penstock and one 2,300 horse power unit, the total capacity being 5,600 horse power under a head of 58 feet. The river above the development has a drainage area of 2,265 square miles. Storage is obtained on Lakes Simcoe and Couchiching. A hydraulic canal, 350 feet long, conveys water from the river to the headworks. From the latter two steel penstocks 9 feet diameter and 150 feet long convey water to the power house. The latter is built entirely of concrete. The three original turbines are of the double-runner horizontal type in cylindrical casings, each of 1,100 horse power and direct connected to 900 K.V.A., 3 phase, 60 cycle generators. The fourth turbine is of the double-runner horizontal type in spiral casing with centre discharge, developing 2,300 horse power and direct connected to a 1,600 K.V.A., 3 phase, 60 cycle generator. Excitation is provided by two 100 K.W. 125 volt generators, each direct connected to a 200 horse power turbine. Regulation is provided by automatic hydraulic governors. A steel surge tank terminates the penstocks which are inter-connected at the power house. A transmission line of 103 miles long conveys energy from the power house at 22,000