

## APPENDIX

under a head of 550 feet, one of the highest in Canada. It is situated on the Beaver River, about 8 miles from Flesherton, the latter being on the Toronto-Owen Sound branch of the Canadian Pacific Railway. A storage area of 1,600 acres with a capacity of 750 million cubic feet, is created by two dams, one of concrete and the other of earth with a puddle core fill, and riprapped on the upstream side. The drainage area above the development is about 76 square miles. From the storage reservoir, water is conveyed successively by a hydraulic canal 5,000 feet long to the head works, thence by a 46-inch wood stave pipe 3,350 feet long to a head-block and from the latter by a 52-inch steel penstock, 1,560 feet long, to the power house. A differential surge tank is installed at the junction of the wood stave and steel pipes. The power house substructure is of concrete, reinforced where necessary, and the superstructure of brick. The ultimate capacity of the development will be 12,800 h.p., for which the present pipe line will be duplicated. The present turbine capacity is 8,800 h.p., the first two units being of 2,400 h.p., and the third, installed in 1918, of 4,000 h.p., the latter unit being fed from a cross-over, ultimately to be connected to the second penstock, from the present penstock. The 2,400 h.p. units are each direct connected to a 1,410 K.V.A., 3 phase, 60 cycle generator and the 4,000 h.p. unit to a 2,810 K.V.A., 3 phase, 60 cycle generator, each provided with a 125 volt direct connected exciter. The turbines are regulated by oil pressure governors and are provided with relief valves. Transmission lines radiate from the power house to Owen Sound, Orangeville and Chester. The total length of these lines is 176 miles, of which 47 miles are at 4,000 volts and the remainder at 22,000 volts, the whole comprising the Eugenia System, which is interconnected with the Wasdell's Falls and Severn, and may later also be connected with the Niagara System.