

NIPIGON RIVER POWER DEVELOPMENT

ALTHOUGH the general characteristics of the Hydro-Electric development on the Nipigon River at Cameron's Falls were described in *The Canadian Engineer* for June 12th 1919, much new matter with respect to the project is contained in a recent issue of the Bulletin issued by the Hydro-Electric Power Commission of Ontario, from which the following is quoted:—

The demand for the use of electrical energy in New Ontario having become such that additional generating capacity was found a necessity, the Hydro-Electric Power Commission of Ontario, at the urgent request of the municipali-



INTAKE OF TEMPORARY DEVELOPMENT

ties in the Thunder Bay district—viz., Port Arthur and Fort William, has undertaken the construction of a large development on the Nipigon River at Cameron's Falls, with provision in the initial installation to take care of the immediate power requirements and with plans so arranged as to permit extensions to be made from time to time as the occasion demands.

The construction of new terminal grain elevators, the demands for power and pulp and paper industries and the possibilities of the mineral resources of the district, as well as the rapidly increasing loads in both cities, were indicative of a demand far in excess of the available capacity of the only existing source of supply—the Kaministiquia Power Co.—and the necessity of making provision for the immediate demands of the future caused considerable anxiety to the local authorities. After careful consideration, a solution of the problem was finally secured by the assistance of the Hydro-Electric Power Commission of Ontario, the ultimate result being a decision to proceed at once with the construction of the Nipigon development.

The city of Port Arthur is being served at the present time with electrical energy through the medium of the Hydro-Electric Power Commission of Ontario, under an agreement between the latter and the Kaministiquia Power Co., bearing date of September 9th, 1909, and an agreement between the municipality and the commission running concurrently with the power company's agreement, both of which expire in December, 1920. These agreements provide for a supply of power up to 10,000 h.p., any excess of this amount necessitating additional development.

During the period of preliminary investigation concerning the future power supply of this district, considerable attention was given to a development at Silver Falls, near Dog Lake, on the Kaministiquia River, located approximately 30 miles west of Port Arthur. This scheme was abandoned, however, due to the ultimate capacity being limited to a maximum of approximately 25,000 h.p.

Lake Nipigon, with an area of 1,500 sq. mi., provides an ideal natural storage basin for this development, whereas the total drainage area of the Nipigon River, including the lake, approximates 9,100 sq. mi.; the maximum stream flow of the river approximates 3,600 sec. ft. without regulation; with regulation on Lake Nipigon, however, 5,800 sec. ft. is obtainable for the operation of the completed development at 75% load factor, thus assuring ideal conditions from a hydraulic operating standpoint.

Neither the Kaministiquia Power Co., nor the abandoned scheme of development at Dog Lake (both of which are located on the Kaministiquia River) is capable of taking care of high load factor loads, such as pulp and paper mills, to the same extent as the various possible developments on the Nipigon River, due to greater variation of stream flow and much smaller drainage area.

As the demand on the Kaministiquia Power Co. was approaching the ultimate capacity of the development, and as the requirements of the Twin Cities could not be adequately provided for from this plant in addition to prospective pulp and paper mill loads, and, furthermore, as the Dog Lake scheme did not permit provision being made for sufficient power for future increase in demand, nor provide for supplying energy to the various high load factor loads which would form future requirements, it was quite obvious that the Nipigon site should

be adopted, and arrangements were perfected after due consideration for starting the work immediately.

Although Cameron's Falls is located at a greater distance from the Twin Cities than Silver Falls, thus necessitating a longer transmission line from the former source,



CAMERON'S FALLS, NIPIGON RIVER

yet, it was considered that the available capacity of the various sites on the Nipigon River, including Cameron's Falls, would provide for the needs of the district to better advantage, as the demands of the class of load peculiar to the neighborhood were such that it would be only a question of time when the Silver Falls development would be inadequate to meet all conditions and the ultimate result would involve a further development on the Nipigon River.