

Editorial

THE GROWTH OF "THE HYDRO."

The last (eighth) annual report of the Hydro-Electric Power Commission of Ontario shows a power load in October, 1915, of 96,000 h.p., an increase of 28,000 h.p. over October, 1914, or an increase of 54,000 h.p. over October, 1913. The power load in December, 1915, was 122,000 h.p. Not counting the municipalities served by the recently absorbed Electric Power Co. system, over 160 municipalities are now being served, compared with 99 municipalities one year ago. This shows the very rapid growth of "the Hydro."

It also gives some indication of the power that will be required in the future when the hydro-electric radial system is in operation, and when other municipalities join the power union. It is estimated that over 200,000 h.p. will be required for the Niagara district alone within a year.

As its contract with the Ontario Power Co. calls for only 100,000 h.p., it is evident that the commission is in immediate need of additional power. At present more cannot be obtained from this company, as it already carries a large Canadian load and is operating to capacity.

There are only two other companies at Niagara to which the commission can turn; namely, the Electrical Development Co., and the Canadian Niagara Power Co. Affiliated as it is with the Mackenzie interests, the Electrical Development Co. is naturally not the commission's first choice. It has, therefore, notified the Canadian Niagara Power Co. that it will require 50,000 h.p. by December next. As the Canadian Niagara Power Co. exports practically all of its power, this will not deprive Canadian users. The company asks \$15 per h.p. year, but the commission considers this price too high, and, according to newspaper reports, threatens to call the Federal Government to its aid, if necessary, to curtail the export of power by the company. A license must be received from the Federal Government for the export of power, and this license is terminable at the end of any year. It is probable, however, that the matter of price will be satisfactorily adjusted, and that the commission will be able to obtain an additional supply from the Canadian Niagara Power Company without any necessity for requesting Federal intervention which, incidentally, might not be granted by the Dominion authorities.

In view of the prospective demand, this additional supply will be more or less of a stop-gap, and it seems imperative that the commission make an immediate start upon the construction of the proposed Queenston plant, as under the best of conditions power cannot be hoped for from this source until at least two, perhaps three, years after the commencement of construction.

The 200,000 h.p. which this plant will primarily supply will do much to relieve what is rapidly developing into a very serious situation. The commission's project is unique in that it will utilize an effective head of 300 feet as against the heads of 136 to 200 feet now being used at Niagara. It is understood, furthermore, that power can ultimately be produced at Queenston at a cost considerably less than the price now being paid to the Ontario Power Co.

PROPOSAL TO DAM NIAGARA RAPIDS.

Dr. T. Kennard Thomson, M.Can.Soc.C.E., a well-known consulting engineer of New York, has laid a proposition before the Ontario government to pay \$2.00 per horse-power year as a royalty for the Canadian power rights in the lower Niagara River. Dr. Thomson's idea is to build a dam, a short distance above Queenston, of such height as to drown out the rapids and create an operating head of 90 feet at the site of the dam. By this means it is proposed to develop about 2,000,000 h.p., which is to be divided equally between the two countries.

At first glance it would appear that the outstanding problem in connection with such a development is the construction of the dam. As a matter of fact, the structural difficulties in connection with this portion of the work are of secondary importance compared to the really vital features of the design. Every engineering problem involving purely structural difficulties can be solved by the adequate expenditure of capital, and it may reasonably be assumed that the structural difficulties in connection with Dr. Thomson's dam could be overcome.

But no engineer who has observed and studied the regimen of the Niagara River can fail to appreciate the gravity of the hydraulic problems to be solved in connection with maintaining a 90-foot head at Queenston, and at the same time, in the restricted space of the gorge, providing for the efficient control of flood water, the supply of water to the turbines, and the prevention of destructive ice-jams which even now periodically form in a channel unobstructed by any artificial agency.

Apart altogether from its engineering features, Dr. Thomson's scheme is hardly likely to find favor with that large and influential section of the Canadian and United States public which is interested in preventing private interests from destroying the scenic beauty of Niagara. If Dr. Thomson's scheme materializes, the whole river from the foot of the Falls to Queenston will assume the characteristics of that comparatively sluggish section of the present river between the foot of the Falls and the cantilever bridge. The splendid rush and billowing of the rapids will be no more. The titanic expenditure of energy which is necessary to wrench this plunging mass of water around through an angle of 90 degrees at the whirlpool will no longer be necessary, and in place of the present maelstrom of whirling cross-currents which now characterizes the sinister beauty of the whirlpool, there will be nothing but a gentle eddy.

MONTREAL AQUEDUCT REPORT.

Persistency, thou art a jewel!

Or words to that effect.

Continual hammering has made its impression upon the aldermen of Montreal, who last Thursday evening requested the Board of Control to invite the Montreal engineers to report on the aqueduct enlargement.

It will be remembered that thirty-one of the most prominent engineers in Montreal petitioned the Board of Control to appoint a commission of engineers to report