

# The Canadian Engineer

*A weekly paper for engineers and engineering-contractors*

## POWER DEVELOPMENT AT CEDARS RAPIDS, QUEBEC

THE PROGRESS THAT HAS BEEN MADE ON THE CONSTRUCTION OF CANADA'S SECOND LARGEST HYDRO-ELECTRIC DEVELOPMENT—DESCRIPTION OF THE PLANT

**H**YDRO-ELECTRIC development in the Montreal district has made rapid strides of late, and is on a scale that anticipates a great demand for power in the near future. Among the various activities, construction work has been progressing favorably since spring upon the hydro-electric power station of the Cedars Rapids Manufacturing and Power Co., near Montreal, Que. It is stated that when completed it will be the largest in Canada, with the exception of the Ontario Power Company's development at Niagara Falls.

past these three rapids. That on the south is the Beauharnois Canal, and that on the north, the Soulanges Canal. The former has been practically abandoned for navigation purposes, all traffic from the the Great Lakes to the Atlantic passing through the Soulanges.

The standing of the St. Lawrence River among the other great rivers of the world is well known. It drains a territory of over 300,000 square miles, a large percentage of which is lake area. Its steadiness of flow renders it distinctive among the largest rivers, the ratio of the

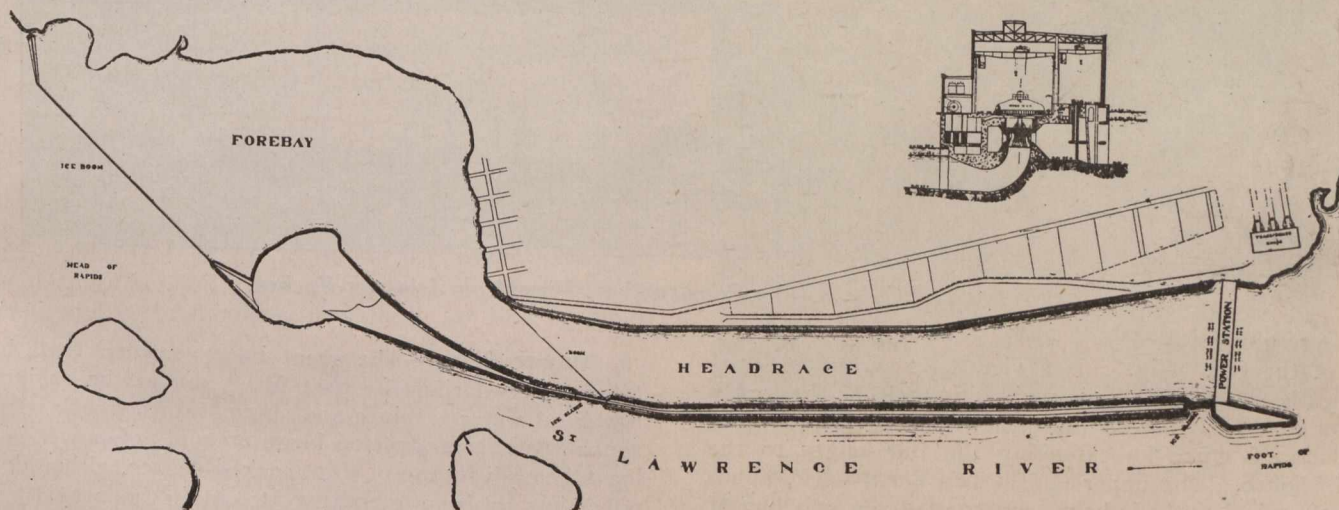


Fig. 1.—General Arrangement of Plant, and Cross Section of Power House.

About fifty miles above Montreal the St. Lawrence River widens out into Lake St. Francis. Above this lake there is a long series of rapids, known principally by the name of the longest one, the Long Sault. Lake St. Louis lies below Lake St. Francis, nearer Montreal, and between these two lakes the river falls through a distance of about eighty feet, made up chiefly of three rapids, namely, Coteau, The Cedars and the Cascade. The Cedars Rapids have a fall of 32 feet, and are located about 30 miles west of Montreal. At this point, the above company is constructing its power station to have an initial rating of about 100,000 h.p., and later to be increased to 160,000 h.p. The general arrangement of the development, showing forebay, headrace and power site, is illustrated in Fig. 1.

A brief summary of surrounding conditions on the St. Lawrence may be of interest. The Department of Railways and Canals, of the Dominion Government, maintains canals on both sides of the river for navigation

maximum and minimum over a yearly period of time has not been known to exceed 3 to 1. Comparing this with the flow, for instance, of the Mississippi, which has a range of 25 to 1, or with the Susquehanna, which has a range of 75 to 1, the remarkable uniformity of the St. Lawrence River flow becomes a factor of inestimable value to any water power development.

For many years the development of the rapids in the St. Lawrence has been discussed, and numerous plans have been made, based upon different types of installation. According to the waterways treaty existing between Great Britain and the United States, which established the International Waterways Commission, any water power developments made on the St. Lawrence are subject to the approval of that commission. No diversions of the water from the river are permitted without careful investigation by that body, so as to insure that the levels for navigation purposes are not affected. In this connection it is to be stated that the commission, and the Dominion Govern-