

CANADIAN ELECTRICAL DEVELOPMENT AT NIAGARA FALLS.

BY ORRIN E. DUNLAP.



The Power House is Shown on the Right at the Water's Edge; Distributing Station on Bluff above; Horseshoe Falls to the Left.

Power House and Distributing Station of Ontario Power Company at Niagara Falls (Canadian Side).

In accordance with its agreement with the commissioners of Queen Victoria Park, the Ontario Power Company on Saturday, July 1st, demonstrated that it had power ready for commercial service by starting the first unit in its power station at Niagara Falls. Thus it is evident that another power company will shortly be prepared to furnish a generous supply of electric power on the Canadian side at Niagara as well as for transmission to the New York side of the river.

The power station of the Ontario Power Company is located at the water's edge on the Canadian side, almost in front of the New York end of the Horseshoe Falls. The first section of the building is now being completed, and it is expected that the installation will supply 60,000 horsepower. The turbines that are being installed by this company were designed and built by J. M. Voith, Heidenheim-on-the-Brenz, Wurtemberg, Germany, and are of the inward-flow, double, Francis type, the two runners of which are 78 inches in diameter, each capable of developing about 5,700 horsepower. The water is controlled at the turbine by swivel gates, and these act as guides. In height the turbines are about 13 feet, while the bed-plate measures 21 by 29 feet. Under a head of 175 feet they will make $187\frac{1}{2}$ revolutions per minute. The head of 175 feet is made up of 155 feet above the shaft and 20 feet below it.

It has been found that the work of the Ontario Power Company on the Canadian side at Niagara is about as interesting as any of the power projects over there. It was this company that built great wing-dams out in the upper river to uncover a large area for the river bed, and when the rocks

were high and dry it proceeded to build two forebays on the uncovered section. These forebays were recently completed and the water let into them for the first time. From the lower end of the inner forebay a steel flume 18 feet in diameter extends to a point on the high bank over the power station. This flume empties into an open relief or spillway near old Table Rock, and from this point the penstocks carry the water supply to the turbines located in the power house in the gorge below. Eight penstocks will connect with each 18-foot flume and drop through shafts and tunnels excavated through the cliff to the power station. It is expected that each big flume will deliver 3,900 cubic feet of water per second, the water flowing through the pipe at about 15 feet per second. Only one steel flume has been built so far, but this is expected to supply enough water for the development of 60,000 horsepower.

Power from this station is to be delivered at the international boundary line to the Niagara, Lockport and Ontario Power Company, which company is now engaged in erecting a transmission line eastward from Niagara Falls, the announced intention being to pass through Lockport, Medina, Albion and other places on the way to Rochester, N. Y. The point where the transmission line will cross the Niagara gorge has been selected, and a force of men is at work there getting ready to string cables across the river. The point is a short distance below the Devil's Hole, where steel towers are to be erected to support the cables in their passage down the Canadian cliff and up the New York cliff. On the Canadian side the heavy timber growth has been cut away for several hundred feet, making a bad scar on the beautiful sec-