

APPENDIX

reinforced concrete required for portions of the work and for the railway bridges over the canal. Practically all the plant is electrically driven, and on the 55 miles of track required in the construction work there are more electric locomotives than at present on all the railways in Canada.

The survey for this work was made in 1914, and if the undertaking had been started when a favorable report was first made, it would now have been finished, and there would have been no acute shortage of power, as complained of at present.

The story of the Queenston-Chippawa enterprise is instructive as an illustration of the development of the water powers under public ownership, compared with the inevitable outcome under private company domination. At the generating station of the new works there will be an effective head of 305 feet and, as the yield of power is in proportion to the height through which the water falls, each cubic foot of water per second will give 30 horse power, as compared with about 15 horse power produced by the present plants operating at the Falls. The treaty between Canada and the United States allots the water on each side not by the horse power actually obtained, but by the volume of water diverted to the power houses. So it follows that if the whole treaty allotment of 36,000 feet per second on the Canadian side were used at the Queenston-Chippawa plant over a million horse power would be obtained, whereas the total energy available to the three private companies is 405,000 horse power. These four generating and transmitting companies were capitalized at about \$46,782,000; the estimated cost of the Queenston-Chippawa development—at a time when material and other costs have about doubled—is \$30,000,000, so that the relative economy for each unit of power can be easily figured.

It should therefore be beyond dispute that if the policy