From the intake on the Niagara River, about two miles above Niagara Falls, water will be conveyed for about five miles by two hydraulic pressure tunnels that pass under the city of Niagara Falls and reach a maximum depth of over 300 ft. below the surface. From the point where the tunnels return to the surface, the water will flow through a 2¼-mile canal to the forebay which adjoins the forebay of the Sir Adam Beck-Niagara Generating Station No. 1 immediately to the north. To the north of the canal will be the pumped-storage reservoir, some 700 acres in extent and capable of storing 650,000,000 cu. ft. of water. At times of low demand, water will be raised by reversible pumps to a level varying from 60 to 86 ft. above the canal. At peak demand periods, it will return to the forebay through the pumps, functioning as turbines, and may provide up to 170,000 kw. at the same time augmenting the flow to the two Sir Adam Beck-Niagara Generating Stations. Thus, additional capacity can be made available at time of system peak, and fuller use can be made of all generating units at times of high demand, particularly when restrictions on the use of water would otherwise prevent the operation of generating facilities to capacity. Provision has been made in the headworks and in the widening of the canal itself for the eventual installation of the four additional units, when required, at Sir Adam Beck-Niagara Generating Station No. 2.

Acting upon the recommendations of the International Joint Commission, and working in close liaison with the United States Army Corps of Engineers, Ontario Hydro in 1953 began the construction of remedial works above the Falls on the Canadian side of the Niagara River. The works include a 1,500-foot-long control dam at Grass Island Pool, and require both the excavation of channels and the filling in of the extremities of the crest on both sides of the cataract. The purpose is to enhance the scenic beauty of the Falls and reduce erosion at the centre by creating a more uniform flow over the 2,600-foot crestline of the cataract, and at the same time to contribute to the most effective use of water for power production.

The addition of two units at Pine Portage Generating Station now being undertaken will complete the installations for which the station was originally designed and will bring the total dependable peak capacity of the four units to 118,300 kw. Construction of the new hydro-electric station at Manitou Falls on the English River was begun in 1953 and will have three units with a total dependable peak capacity of 42,100 kw.

The development of the International Rapids Section of the St. Lawrence River for power was also carried forward during 1953 when the Federal Power Commission of the United States granted a licence to the Power Authority of the State of New York to carry out the United States part of the work. The last legal obstructions to the undertaking were overcome in June 1954. (*See* special article, The St. Lawrence Power Project, pp. 549-553).

In October 1953, the complex program of frequency standardization entered its fifth year. By the end of the year, standardization operations had been completed for well over a third of the estimated number of customers requiring the standardization of equipment. The standardization operation had been completed in 84 municipalities and part of the work had been done in 26 others. Sixteen rural operating areas had been completely standardized and part of the work had been done in 15 other rural operating areas.