

at 144,000 kw. and that for the second unit at approximately 175,000 kw. The pumping-generating station is designed for two units, each rated at 9,720 kw. The Company's Wabamun thermal plant is to be extended to house an additional 300,000 kw. of generating capacity for operation in late 1967, bringing the total capacity of the plant to 582,000 kw.

Canadian Utilities Limited in 1964 added a second 32,000-kw. coal-fired steam turbo-generator at their Battle River plant at Forestburg and tenders were called for the turbine component of a 75,000-kw. coal-fired unit scheduled for commissioning in 1968. A study to determine the hydro-electric potential of the Smoky River in the Grande Prairie-Peace River area indicates that a development of about 400,000 kw. may be feasible.

British Columbia.—Substantial progress on the British Columbia Hydro and Power Authority's Portage Mountain hydro development on the Peace River was reported in 1964. The development is planned for ten units with a total capacity of 2,270,000 kw., three of which are scheduled for service by the autumn of 1968. In 1964, the three 48-foot-diameter, 2,500-foot-long tunnels, built to carry the river past the construction site, successfully handled the largest flow on record of the Peace River.

During the year, Canada and the United States exchanged instruments of ratification of the Columbia River Treaty and Protocol, clearing the way for construction of the three storage dams that will regulate the flow of the Columbia River for power and flood prevention purposes. Under the terms of the Treaty, Canada is entitled to one half the power benefits accruing in the United States from the regulation of 15,500,000 acre-feet of water stored in Canada behind the proposed Duncan Lake, Arrow and Mica Dams and one half the value of the estimated flood damage prevented in the United States through the operation of the proposed dams for flood control. Under the terms of the Treaty, the three storage dams are required to be in operation by 1973.

The third 150,000-kw. unit at British Columbia Hydro's Burrard thermal station is scheduled for service early in 1965 and a fourth unit will be in service by September 1967. The ultimate capacity at Burrard will be 900,000 kw. in six units.

Yukon and Northwest Territories.—Construction work at the Northern Canada Power Commission's Twin Gorges hydro station on the Taltson River progressed on schedule during 1964. The station, some 35 miles northeast of Fort Smith, N.W.T., will house a single 18,000-kw. unit which is scheduled for service in October 1965. New thermal capacity added in the Northwest Territories in 1964 amounted to 460 kw., and in Yukon Territory, 110 kw.

Section 3.—Power Generating Capability and Load Requirements

Power generating *capability*, as covered in this Section, is the measurement of the available generating resources of all hydro and thermal facilities at the time of the one-hour firm peak load for each reporting company, and is not equal to the *capacity* of such generating facilities. For example, a hydro plant may have a capacity of 100,000 kw. but if, at the time of peak load, the water available for generation is only 80 p.c. of the plant capacity requirements, then its capability is 80,000 kw.

Total generating capability has grown at a rapid rate since 1954. The annual rate of increase was 6.9 p.c. in the ten-year period 1954-64 and 3.9 p.c. in the four-year period 1960-64. In comparison, the forecast rate of growth for the years 1965-69 is 7.4 p.c.; thermal generating capability is expected to grow at the average rate of 11.8 p.c. a year in the forecast period compared with 14.2 p.c. in the period 1954-64 but hydro-electric capability is expected to increase at 6.2 p.c. a year compared with 5.5 p.c. in the 1955-64 period. This increased rate of growth in hydro generating capability in the forecast period is attributable to the large power projects now under construction in relatively remote areas which will be completed within the next few years.