

on the Madawaska River near Arnprior but construction was delayed pending solution of a number of problems. The station had been scheduled for completion in 1976.

Almost all sizable water-power sites in Ontario within easy reach of demand centres have now been developed but planners are studying more remote sources as improvements in long-distance transmission techniques may soon bring some of these sites within economic range. Meanwhile, expansion in the short term will all be thermal, whether conventional or nuclear.

The highlight of 1971 for Ontario Hydro came in April when the first of four 540,000-kw nuclear units was placed in service at the Pickering station east of Toronto. A second 540,000-kw unit went on line in October. Units 3 and 4 were scheduled to see service in 1972 and 1973, respectively. During 1972, three additional 7,500-kw gas turbine auxiliary units were expected to complement three similar units already installed at Pickering.

Employing the CANDU (Canadian Deuterium Uranium) system, which uses natural uranium fuel and a heavy-water moderator, the Pickering operation is being closely watched by energy producers the world over. It is the third and largest nuclear station to see service in Ontario; the 20,000-kw Nuclear Power Demonstration (NPD) plant at Rolphton was commissioned in 1962 followed by the 220,000-kw Douglas Point station in 1966. Ontario Hydro has co-operated closely with Atomic Energy of Canada Limited, the designer, in the building and operation of all three facilities.

Construction is proceeding on a fourth nuclear development, the 3,200,000-kw Bruce complex near Kincardine, and first power should be available by 1975; completion of the four-unit plant is scheduled for 1978. In conjunction with the generating station, a plant to produce the heavy water needed for the moderator is also being built.

In addition to the nuclear stations, construction is also under way on two large conventional steam generating plants. The first of two 500,000-kw coal-fired units at the Nanticoke station (near Port Dover) began to deliver power during 1972; another six units of similar size are scheduled to go on line between 1973 and 1977 (two of them in 1974), bringing the total capacity to 4,000,000 kw. The 2,295,000-kw oil-fired Lennox station being built west of Kingston is expected to have its first two units operative by 1975 with the final two coming on line in 1976 and 1977.

A sizable expansion of Ontario's transmission network was also accomplished during the year with about 900 circuit miles of transmission line and nearly 3,000,000 kilovolt-amperes of transformer capacity being installed.

Manitoba. Manitoba Hydro is the primary agency responsible for the generation and distribution of electric power in the province. The corporation was formed April 1, 1961, merging The Manitoba Power Commission, the provincial distributing agency created in 1919 to serve rural Manitoba, and The Manitoba Hydro-Electric Board, the power generating and development authority established in 1951.

Manitoba Hydro serves 254,263 consumers in some 700 communities throughout rural Manitoba and suburban Winnipeg. Electrical energy transmitted over 39,300 miles of Manitoba Hydro line totalled 9,900 million kwh. Manitoba Hydro operates nine hydro-electric stations, two thermal-electric stations and 26 isolated diesel plants with installed capacity totalling 2,235,258 kw. The nine hydro stations and two thermal stations, operated in conjunction with the City of Winnipeg Hydro Electric System's Pointe du Bois and Slave Falls stations, form the Manitoba Integrated System.

Pine Falls, McArthur, Seven Sisters and Great Falls hydro stations are on the Winnipeg River approximately 70 miles northeast of Winnipeg; Grand Rapids hydro station is on the Saskatchewan River 285 miles northwest of Winnipeg; and Kelsey and Kettle Rapids hydro stations are 400 and 450 miles northeast of Winnipeg on the Nelson River. Responsibility for operation of the Sherritt Gordon Mines Laurie River hydro stations 1 and 2 was assumed by Manitoba Hydro in May 1970. A power line 140 miles northwest from Thompson to Laurie River ensures that continuing growth in power requirements at Sherritt Gordon's mining properties and the town sites of Lynn Lake, Fox Lake and Leaf Rapids will be met.

Of the three Prairie Provinces, Manitoba, with immense hydro-electric capabilities on the Winnipeg, Churchill, Nelson and Saskatchewan rivers, is the most generously endowed with water power resources. Until recently, hydro-electric generating stations on the Winnipeg River supplied most of the power requirements of southern Manitoba. Manitoba Hydro's