

The capacity of the Nelson River HVDC transmission system has been increased by addition of the final two converter units for Bipole I, scheduled for service by mid-1977, to double capacity to 1620 MW. To provide additional capacity for Long Spruce generation and later for Limestone, further additions to converter capacity comprising Bipole II will be added in stages in a new converter station at Henday near the Limestone generating station, and in an extension of the Dorsey terminal near Winnipeg; 900 MW was scheduled for 1978 and the final 900 MW for 1983-84. With these additions, the full capability of the two ± 450 -volt DC transmission circuits between the Nelson River generating sites and Winnipeg will be used.

Manitoba Hydro was granted a licence by the NEB to construct a second international 230-kilovolt transmission circuit, extending from the Ridgeway substation near Winnipeg to the US (Minnesota) border near Sprague, Man. Manitoba Hydro will export interruptible energy and short-term power to Minnesota Power and Light over this line, which was brought into service late in 1976, and will derive important system support benefits in the event of loss of supply from the north.

Manitoba's total load increased 1.9% from 1975 because of growth in the southern system load. Residential and farm demand showed an increase of 10.5%, most of it because of an increase in the number of customers. Commercial consumption increased 6.1%. The apparent 5.3% decrease in industrial demand was due to a decline in mining activity.

In-province generation was 14.0 terawatt hours, down 5.5% from that of 1975. Hydro generation of 12.7 TWh represented 91.0% of total generation compared with 14.3 TWh (96.8% of total) in 1975. The drop in hydro production was due to low water flows and was partially compensated by thermal production which increased from 0.5 TWh in 1975 to 1.3 TWh in 1976.

13.10.8 Saskatchewan

There were no additions to generating capacity in Saskatchewan in 1976; 67.2% of power generated in the province came from thermal power stations and 32.8% from hydro.

Total load increased 4.7% over 1975. This is lower than expected, and was due to zero growth in potash production, a decline in pipeline pumping and a mild winter. However, a 3.5% decline in industrial use was more than offset by increases in other categories. Sales to residential and farm customers increased 5.3%, due in part to a 3.3% increase in number of customers, and commercial consumption increased 4.1%.

Saskatchewan Power Corp. forecasts an annual load growth over the next five years of 6.6% for net system energy requirements anticipating industrial expansion, increased use of electricity for space heating and normal growth in customer sales categories.

Future plans for new generation include a 300-megawatt lignite-fired unit at Boundary Dam in 1977 to be followed in 1979 by the first 300-MW unit at the Poplar River lignite-fired plant near Coronach in south-central Saskatchewan. Transmission developments linked to new generation will include the construction of several 230-kilovolt lines.

13.10.9 Alberta

AEC Power Ltd. (a subsidiary of Alberta Energy Corporation and Calgary Power Ltd.) is building a 260-megawatt thermal generating station to supply power and process heat to the nearby Syncrude oil sands mining and refining project. Load growth in 1976 was 6.8%. Energy demand by sector showed increases over 1975 in residential (6.4%), commercial (9.0%) and industrial (8.5%) categories. More than 87% of electrical supply was generated in coal (58%) or gas (29%) thermal plants.

In 1976, Calgary Power completed four major construction phases at the Sundance coal thermal station on Lake Wabamun: a 486-hectare cooling pond commissioned late in 1975; conversion of the ash disposal system from a slurry to a dry-haul system enabling collection of both bottom ash and fly ash; and construction of the 750-MW (two 375-MW units) addition was completed with the No. 3 unit commissioned in 1976 and No. 4 in service in early 1977. Construction is in progress for two additional 375-MW units (Nos. 5 and 6) scheduled for commissioning in 1978 and 1980. Demand for