

a detailed study in conjunction with one or more power utilities designed to analyze and apply load management experience in other jurisdictions and to expand on the findings of an analysis by the regional economic expansion department with the co-operation of Nova Scotia Power.

## 13.10 Provincial activities, 1976

### 13.10.1 Newfoundland

About 99% of the province's electrical energy is hydraulic in origin and the rest oil-fired thermal. With the addition of Churchill Falls' production the province's hydro generation (38.8 terawatt hours) exceeded that of Ontario (38.3 TWh) and British Columbia (36.7 TWh). Churchill Falls power supplied under contract to Quebec totalled 32.1 TWh (82.8% of total hydro production for the province).

Energy demand from the Newfoundland and Labrador system increased 15.5%. Consumption by residential and commercial customers grew by more than 15% and 11% respectively over the previous year. Statistics for industrial consumption are still incomplete but preliminary data indicate a substantial increase reflecting a return to normal demand following depressed sales resulting from industrial disputes in energy-intensive industries in 1975.

Major additions in 1976 were confined to combustion turbine installations of 53.8 megawatts at Stephenville and 25 MW at Green Hill near Grand Bank. Growth in demand over the next several years is expected to average about 8% a year and to meet this increased load, combustion turbines will be added at St. John's (Hardwoods Station — 54 MW, 1977), Flower's Cove (15 MW, 1978) and Port aux Basques (25 MW, 1980). An additional 154-MW hydro unit at Bay d'Espoir was scheduled for service in 1977 and a third 150-MW oil-fired unit at the Holyrood thermal station was scheduled for 1979.

Transmission developments included completion of a second 105-kilometre 230-kilovolt circuit from Bay d'Espoir to a terminal station near Grand Falls and construction of a 274-km 138-kV line from the Churchill Falls plant to Goose Bay thus replacing the thermal generation station by lower cost hydro supply.

### 13.10.2 Prince Edward Island

Electric power generation is entirely dependent on oil fuel, and rapid increases in oil prices have led to very high electricity costs. The submarine cable interconnection with New Brunswick scheduled for service in 1977 should relieve the province's dependence on local small-scale oil-based generation by providing access to power supply from larger, more efficient fossil-fuelled plants and from nuclear generation on the mainland.

The Prince Edward Island/New Brunswick interconnection facility, owned by PEI, involves an investment of some \$36 million, \$27 million of it financed by the federal government in the form of an \$18 million grant and a \$9 million long-term loan. This 138-kV interconnection will comprise two three-phase cables with a firm rating of 100 MW (100 MW each cable plus 100% standby) linking terminals near Cape Tormentine, NB and Borden, PEI.

Provincial load grew 6.3% over 1975. Energy demand increased 6.9% for residential customers and 8.4% for commercial.

### 13.10.3 Nova Scotia

To reduce dependency on expensive imported oil, the Nova Scotia Power Corporation has intensified its search for alternative sources of energy. Confirmation of adequate coal reserves under an exploration program carried out in 1977 will lead to an ultimate capacity of 600 MW at the Lingan thermal station and will be a major step in the displacement of offshore oil. Studies are in hand on conversion of existing oil-fired stations to coal, and the introduction of coal/oil slurry technique to maximize the use of coal in boilers designed for oil firing.

Provincial load growth was 6.6%. Increases in energy demand were recorded in residential (6.0%), commercial (8.8%) and industrial (10.2%) categories. About 86% of