British Columbia Hydro and Power Authority Annual Report 1979/80

Public Service with a Smile

Susan Ainsworth, shown on our cover, is one of many B.C. Hydro employees who deal directly with our customers in British Columbia. These Hydro employees provide efficient service to the public with courtesy and a smile. Mrs. Ainsworth, of Applications Services, typifies thousands of employees who, in one way or another, help Hydro to discharge its prime responsibility of supplying electricity and gas in this province.

Contents

The Year's Highlights *for the year ended 31 March 1980*

CONTINUING OPERATIONS	1980	1979
FINANCIAL *(in thousands)*		
Revenues	**$916,006**	$862,514
Net income		
Electric	**$ 82,375**	$ 95,256
Gas	**$ 10,043**	$ 13,009
Rail freight	**$ 2,025**	$ 1,395
Expenditures on fixed assets	**$754,800**	$718,520
OPERATING		
Electricity sold in British Columbia (millions of kW·h)	**26 203**	25 564
Gas sold (terajoules)	**88 074**	87 733
Freight carried (thousands of tonnes)	**2 603**	2 536

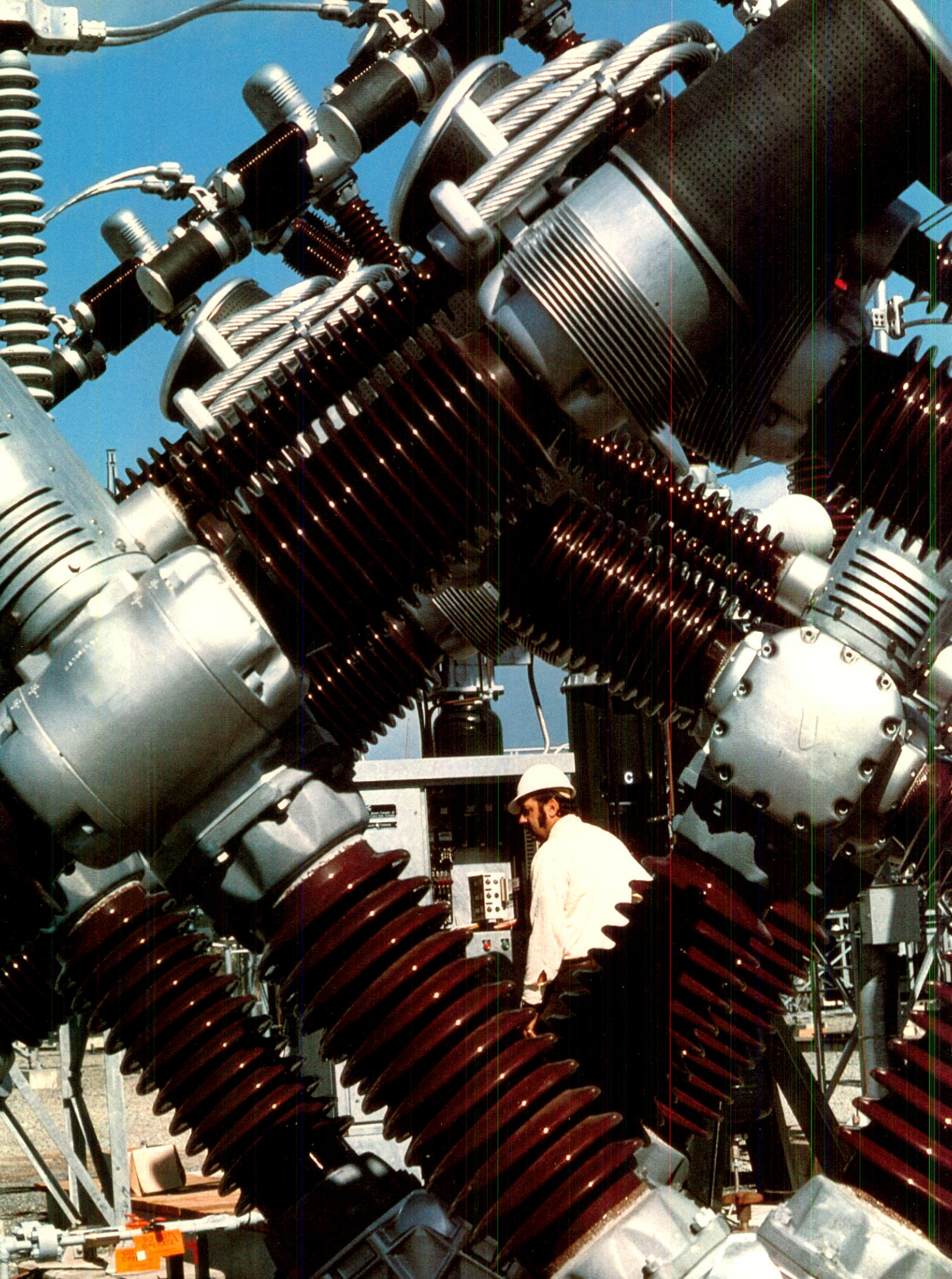
The Business of B.C. Hydro *as at 31 March 1980*

British Columbia Hydro and Power Authority — B.C. Hydro — is a provincial Crown corporation providing electric, gas and rail freight services for the people of British Columbia. A Board of Directors, appointed by the provincial Cabinet, has overall responsibility for the management of the corporation.

Hydro generates, transmits and distributes electricity throughout areas containing more than 90% of the province's population. Most of the electricity comes from hydroelectric power plants and reaches customers through an interconnected, province-wide system of transmission lines. Remote communities not connected to main transmission lines are served by small local generating plants.

Hydro also distributes natural gas in Greater Vancouver and the Fraser Valley and butane-air gas in Greater Victoria. It operates a local and terminal rail freight service in Greater Vancouver and the Fraser Valley.

Until 31 March 1980, Hydro owned and operated transit systems in Greater Vancouver and Greater Victoria. On 1 April 1980, responsibility for operation of the transit systems was transferred to the Metro Transit Operating Company and the Urban Transit Authority, but Hydro staff will continue to provide some services under contract during a phasing-out period of about two years.



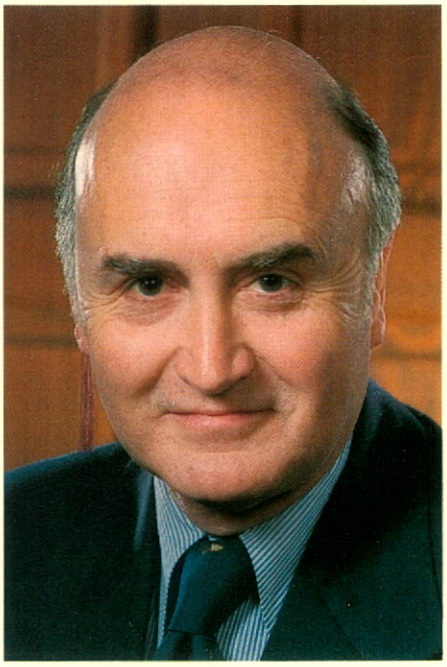
Report of the Directors

The start of a new decade is a time to look back as well as ahead — to pause and review the past before moving on to meet the challenges of the future. For B.C. Hydro, the beginning of the 1980s is an especially significant time because of changes which are taking place.

For some time it has been provincial government policy to remove responsibility for passenger transportation services from B.C. Hydro. During the year, further legislative and administrative steps were taken to carry out this policy. Remaining links with transit now are being phased out, ending Hydro's association with a public service which we and our predecessor organizations provided in British Columbia for more than 90 years. The removal of responsibility for transit does not affect Hydro's electric and gas rates, which are based on the costs of providing these separate services.

The rate of growth in electric demand slowed somewhat during the 1970s compared with the rapid development of the 1950s and 1960s. During the past year, Hydro's kilowatt-hour sales of electricity in British Columbia increased by only 2.5%. This small increase reflected an unusually mild winter and slow economic growth and should not therefore be viewed as an indication of future trends. Industrial, commercial and residential development in the regions we serve, together with the need to reduce the province's dependence on imported oil, suggest instead a continuing growth in electric requirements. As a result, Hydro's load forecast predicted that demand for electricity — excluding any allowance for possible exports — will grow at an average annual rate of 5.9% during the 1980s. Predicted load growth is reviewed annually.

Ingledow Substation production supervisor Tony Hack, standing at a control box in the 230 kV switchyard, is framed by a series of brown porcelain insulators.



Robert W. Bonner

At hearings in January 1980, the National Energy Board of Canada ruled that B.C. Hydro does not plan, construct or operate its electric system for export purposes. The NEB subsequently renewed Hydro's licences to export electricity through September 1984.

Customers on Vancouver Island responded positively to our appeal to reduce peak use of electricity last winter, but the electric supply situation on the Island will remain critical until the first circuit of the mainland-Island 500 kilovolt transmission line, scheduled for 1983, is in service.

The provincial government announced a new energy policy in February 1980. Among the highlights were plans to establish a new commission to regulate Hydro's electric and gas services and to introduce a new review process to evaluate future major energy projects. The government indicated it would introduce legislation on these matters during the spring session in 1980. We anticipate that these changes will contribute to improved public understanding of Hydro's policies and activities.

After absorbing a loss of $56 million on passenger transportation operations, but before allowing for the capital loss arising from the transfer of responsibility for urban transit operations, B.C. Hydro's income for the year ended 31 March 1980 was $40 million. With the loss of $38 million arising from the transfer of responsibility for transit operations, primarily the transfers of fixed assets to the Urban Transit Authority and the Metro Transit Operating Company for nominal sums, net income became $2 million.

Capital and operating expenditures by B.C. Hydro during the year were $1,671 million, equivalent to approximately 5.1% of the estimated Gross Provincial Product. This ratio, indicative of Hydro's effect on the provincial economy, has remained fairly constant over the past decade. Total direct employment provided in British Columbia by Hydro and our contractors exceeded 16 000 jobs.

Two of the largest contracts ever awarded by B.C. Hydro were issued during the year. A $283 million contract was let to a Canadian consortium for construction of the power plant and concrete dam at the Revelstoke hydroelectric project, and a $235 million order for supply and installation of submarine cables for the mainland-Vancouver Island transmission project was placed with a joint venture of European companies.

The Board records, with regret, the death on 11 January 1980 of Einar M. Gunderson, Executive Director of B.C. Hydro from its inception in March 1962 until August 1972.

The Directors wish to note their appreciation of the work of B.C. Hydro's employees in providing electric, gas and transportation services to the people of British Columbia during the year.

On behalf of the Board

Robert W. Bonner, *Chairman*

Review of Operations

Passenger Transportation Service

In accordance with generally accepted accounting practices, urban passenger transportation service is treated as a discontinued operation and transit results are segregated in the financial statements. Figures for the year ended 31 March 1979 have been reclassified to permit a more meaningful assessment of Hydro's continuing operations. To reflect the practice followed in the financial statements, transit highlights are reviewed below while the remainder of the report deals only with continuing operations.

Revenues from urban passenger transportation rose to $41 million from $35 million in the previous year. The increase was attributable to a full year's operation at higher fares introduced in September 1978, combined with an increase of 3.9% to 105 million in the number of passengers carried. Operating losses on the urban transit service were $56 million compared with $53 million the previous year, when Hydro also absorbed an $8 million loss on interurban passenger transportation services. Responsibility for the interurban services was transferred to Pacific Coach Lines Limited effective 1 April 1979.

The loss on disposal of passenger transportation operations, amounting to $38 million, is shown as an extraordinary item in the financial statements. Because Hydro will be reimbursed for services provided to the Metro Transit Operating Company during the phasing-out period, no additional losses are anticipated. Official transfer of approximately 2 900 B.C. Hydro employees who perform transit or transit-related functions is expected to take place gradually over the 12 months ending 1 April 1981.

The urban passenger transportation service can trace its roots to 6 April 1889. That's the date the Vancouver Street Railway Company and the National Electric Tramway and Lighting Company (in Victoria) were incorporated. Transit service in New Westminster (where this photo was taken on May Day, 1896) began with the Westminster Street Railway Company, incorporated in 1890.

Electric Service

Revenues from the electric service were $717 million, up 7%. The increase reflected higher sales volume in British Columbia as well as rate increases for bulk industrial customers in April 1979 and for other customers in September 1979. Electric revenues included $39 million from the sale of surplus electricity to the United States. Revenue from this source, which is available when water and market conditions permit, was higher than in the previous year because of increases in market price. Sales of surplus electricity were curtailed in late November 1979 in anticipation of low water conditions in British Columbia.

Sales of electricity in B.C. Hydro's service area totalled 26 203 million kW·h, an increase of 2.5% over the previous year. The highest one-hour demand ever recorded on the integrated transmission system — 5 198 000 kW — occurred on 28 January 1980, an increase of 2.1% from the previous year's high.

During the year, we connected our one millionth electric customer, and at 31 March 1980, were serving 1 010 000 customers with electricity, an increase of 26 000 from the previous year. Average annual consumption per residential customer declined from 8 747 kW·h to 8 736 kW·h.

On Vancouver Island, the regional peak of 1 256 000 kW was only slightly higher than the previous winter's peak despite the addition of 4 500 new customers, most of whom installed electric space heating. This peak would have been much higher without the positive response by Vancouver Island customers to our appeal to reduce use of electricity at peak hours.

Sales of electricity in British Columbia by category of customer and percentage changes from the previous year were:

	Year ended 31 March 1980 kW·h in millions	% increase from previous year
Residential	7 612	2.8
General	9 136	3.9
Bulk	9 229	0.9
Other systems	226	4.2
	26 203	2.5

The following table shows total requirements for electricity and sources of supply for the year under review:

	kW·h in millions	% of total
Requirements:		
Sales in British Columbia	26 203	84.4
Export	1 077	3.5
Line loss and system usage	3 770	12.1
	31 050	100.0
Sources of supply:		
Hydro generation		
Gordon M. Shrum	12 182	39.2
Mica	7 524	24.2
Other	9 140	29.5
Thermal generation		
Burrard	624	2.0
Other	141	0.5
Purchases	1 439	4.6
	31 050	100.0

South Interior live line instructor John Zucco, changing insulators on 500 kV transmission line.

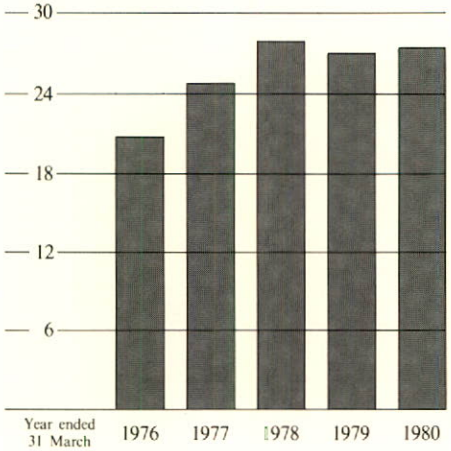
Patrolman Al Shemko of Squamish power district inspects high voltage transmission line from helicopter.

The generating capacity of plants operated by B.C. Hydro at 31 March 1980 was as follows:

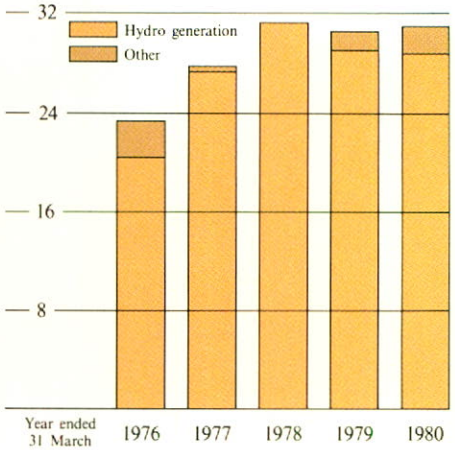
	Installed nameplate generating capacity (kW in thousands)
Hydroelectric plants	
Ruskin	105.6
John Hart	120.0
Bridge River	428.0
Cheakamus	140.0
Gordon M. Shrum	2 416.0
Jordan River	150.0
Kootenay Canal	529.2
Mica	1 736.0
Seven Mile	405.0
Other (21 plants)	558.3
	6 588.1
Thermal plants	
Georgia	75.5
Port Mann	100.0
Burrard	912.5
Prince Rupert	57.2
Keogh	99.7
Other (78 plants)	115.0
Total thermal	1 359.9
Total generating capacity	7 948.0

During the year, B.C. Hydro received a grant of $3 million from the Province of British Columbia to provide assistance for rural electrification. In the year under review, $2.1 million of this grant was used to offset operating losses of electric systems in isolated areas. The remaining $0.9 million was used to improve and extend electric service in rural areas. The 1980/81 estimates of expenditure of the Province do not contain any funds for B.C. Hydro's continuing program of rural electrification. The provincial government considers this is a responsibility of B.C. Hydro within its mandate and assumes the existing level of rural electrification will continue or increase.

Sales of Electricity *(kW·h in billions)*



Sources of Electricity Supply *(kW·h in billions)*



Gas Service

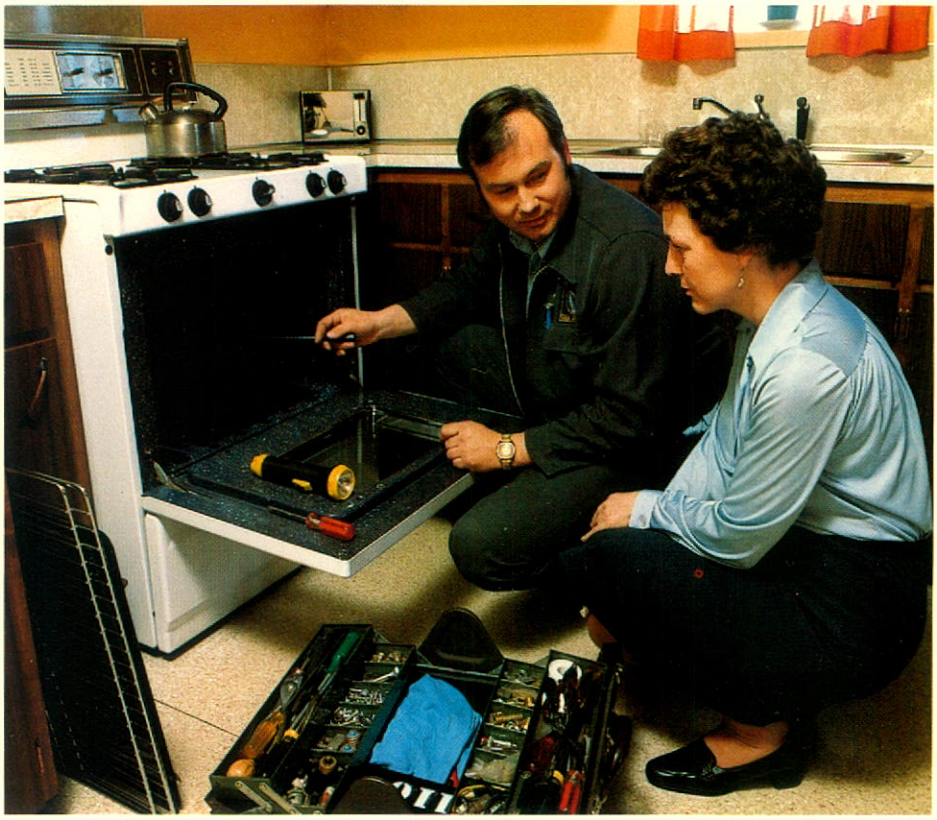
Revenues from sales of gas were $173 million, up $3 million or 1.5% from the previous year. Sales volume for the year increased less than 1% from the previous year to 88 074 terajoules.* Interruptible sales increased but firm sales decreased because of warmer weather and increased conservation and in spite of the addition of a near-record 11 800 accounts.

The year's peak one-day output of gas, which occurred on 9 January 1980, was 507 terajoules, almost identical to the previous year's peak. To meet the winter peak requirements, all the liquefied natural gas from the storage plant at Tilbury Island in Delta was used.

In February 1980, B.C. Hydro was granted leave to appeal National Energy Board decisions approving changes in cost of service charged by Westcoast Transmission Company Limited. A hearing in the Federal Court of Canada was set for 6 October 1980. The NEB decisions were made following lengthy and complex hearings into an application by Westcoast involving a variety of rate-related matters. The implications of the NEB decisions include substantial potential increases in B.C. Hydro's cost of gas.

Investigations into the possibility of developing underground natural gas storage in the South Surrey area of the Lower Fraser Valley were discontinued in August 1979 after the Provincial Ministry of Energy, Mines and Petroleum Resources denied Hydro's application under the Underground Storage Act, 1964, for a licence to carry out exploration.

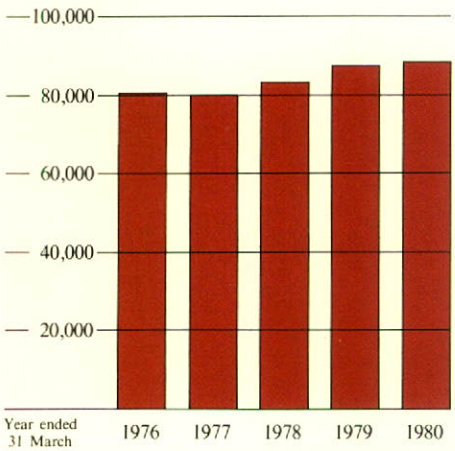
At 31 March 1980, the total number of natural gas customers in Greater Vancouver and the Fraser Valley was 293 000, an increase of 4.3% from the previous year. In Greater Victoria, butane-air gas customers declined to 4 655, a decrease of 3.6%.



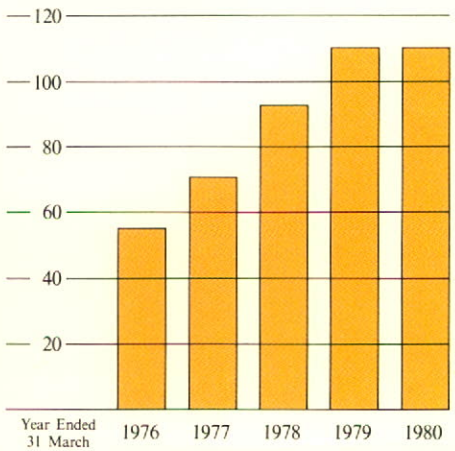
Gas technician Gary Cook checks customer's appliances for efficiency and safety as part of Hydro's energy conservation program.

In late September 1979, the 100 000th customer was connected to the Fraser Valley gas distribution network. In view of the preference for gas as a space heating fuel and the known reserves of natural gas in British Columbia, prospects for further growth in the Fraser Valley and metropolitan Vancouver are excellent. There was a substantial increase in the number of residential conversions from oil to gas, up 3 669 or 355% from the previous year.

Sales of Gas *(terajoules)**



Average Cost of Natural Gas Purchased for Resale *(cents per gigajoule)**



**The joule is the standard unit of heat content in metric measurement. A gigajoule is 1 000 000 000 (one billion) joules; a terajoule is 1 000 000 000 000 (one trillion) joules.*

More than 2 600 thousand tonnes of freight were handled by Hydro's rail service, with revenues reaching $24 million.

Rail Freight Service

Revenues from rail freight operations amounted to $24 million, an increase of 14% over the previous year, primarily the result of a number of industry-wide freight rate increases and fuel surcharges during the year. We handled 2 603 thousand tonnes of freight, up slightly from 2 536 thousand tonnes the previous year.

On 11 May 1979, Hydro began operating a computerized rail car control and information system designed to improve customer service in locating and dispatching rail cars and preparing customer bills.

Rates

Under present provincial and federal laws, B.C. Hydro is responsible for determining rates and collecting revenues for its electric, gas and railway freight services. Our policy is to provide service to customers at the lowest practical cost consistent with sound management. Rates for electricity and gas are reviewed on a continuing basis.

Following a review of projected costs and revenues, Hydro's directors in spring 1979 approved rate increases averaging 4% for residential and general electric customers, 2.5% for natural gas customers and 4% for butane-air gas customers. These increases took effect 1 September 1979. Following a similar review of projected costs and revenues for the year ending 31 March 1981, a further increase in residential and general electric rates, averaging 7%, was announced in February 1980, to take effect 1 April 1980. Bulk electric customers served at transmission voltages received rate increases averaging 13% on 1 April 1979, with a further increase averaging 22% effective 1 April 1980. These customers also received notice during the year of another increase, averaging 20%, to take effect 1 April 1981.

In February 1980, the provincial government announced plans to establish a new commission to be responsible for all energy regulatory responsibilities, replacing the present British Columbia Energy Commission and taking over all its regulatory functions. At 31 March 1980, legislation respecting these changes had not been enacted.

Cost of Providing Services

The total cost of providing all services during the year, excluding discontinued passenger transportation operations, was $820 million, an increase of $67 million or 9% over the previous year.

Interest and other costs on bonds and debentures charged to continuing operations during the year totalled $310 million, up $27 million or 9.5%. The increase reflected higher interest rates and the placing in service of new fixed assets. Interest on money borrowed to pay for new fixed assets becomes a charge against operations when the assets are placed in service.

Salaries, wages and employee benefits charged to continuing operations amounted to $144 million, an increase of $12 million or 9.2%, reflecting higher rates of pay and increases in employee benefits.

Depreciation charged to continuing operations amounted to $119 million, an increase of $13 million or 11.9% more than the previous year. Increases in depreciation expense are directly related to the transfer to active service of new plant; consequently, higher costs of construction are now being reflected as a charge against operations.

Grants, school taxes and water rentals charged to continuing operations totalled $71 million, an increase of $5 million or 7.1%. The increase resulted primarily from additions to fixed assets.

Purchases of natural gas for resale to the public totalled $102 million, approximately the same as in the previous year. Purchases of electricity totalled $17 million, up $5 million from the previous year.

Financing

B.C. Hydro finances its investment in fixed assets with funds from operations and from borrowings. Borrowings are made within Canada if funds are available at competitive rates. While most borrowings in the past have been made from Province of British Columbia and Government of Canada trusteed funds, we also have borrowed in the bond markets of Canada, the United States and Europe. At 31 March 1980, our outstanding bonds and debentures totalled $5.7 billion compared with $5.1 billion a year earlier. Of the $5.7 billion, 75% was denominated in Canadian dollars and the rest in United States dollars.

Long-term borrowings have sinking fund provisions to ensure that funds are available at maturity to repay a significant portion of the debt. At 31 March 1980, these sinking funds totalled $420 million.

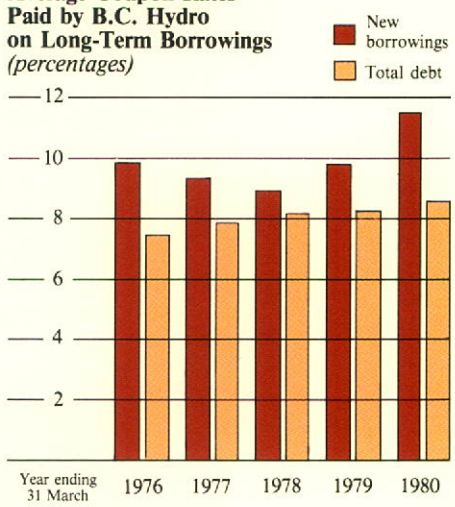
During the year under review, $567 million was borrowed from the following sources, all in Canadian funds:

	Millions
Province of British Columbia trusteed funds	$550
Canada Pension Plan Investment Fund	$ 17

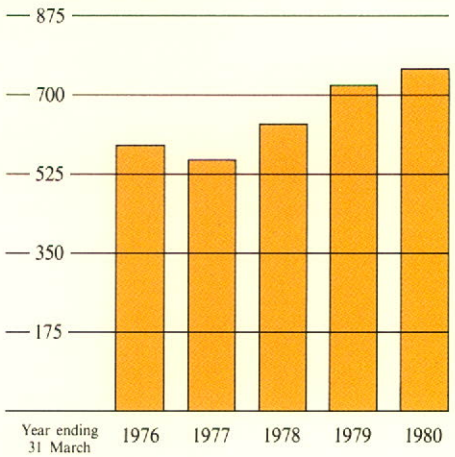
The average annual coupon rate of bonds sold during the year was 11.58% compared with an average of 9.89% for the previous year. The increase reflected generally higher interest rates in the bond market. The average interest rate on bonds and debentures outstanding at 31 March 1980 was 8.61% compared with 8.26% at the end of the previous fiscal year.

During the year, trustees received $82 million to meet sinking fund requirements of bonds and debentures.

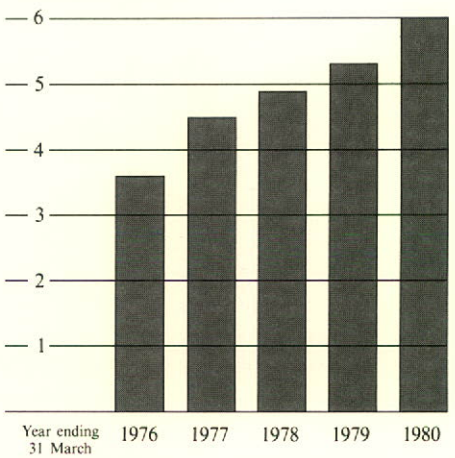
Average Coupon Rates Paid by B.C. Hydro on Long-Term Borrowings
(percentages)



Expenditures on Fixed Assets
(dollars in millions)



Fixed Assets in Service, at cost
(dollars in billions)



Construction

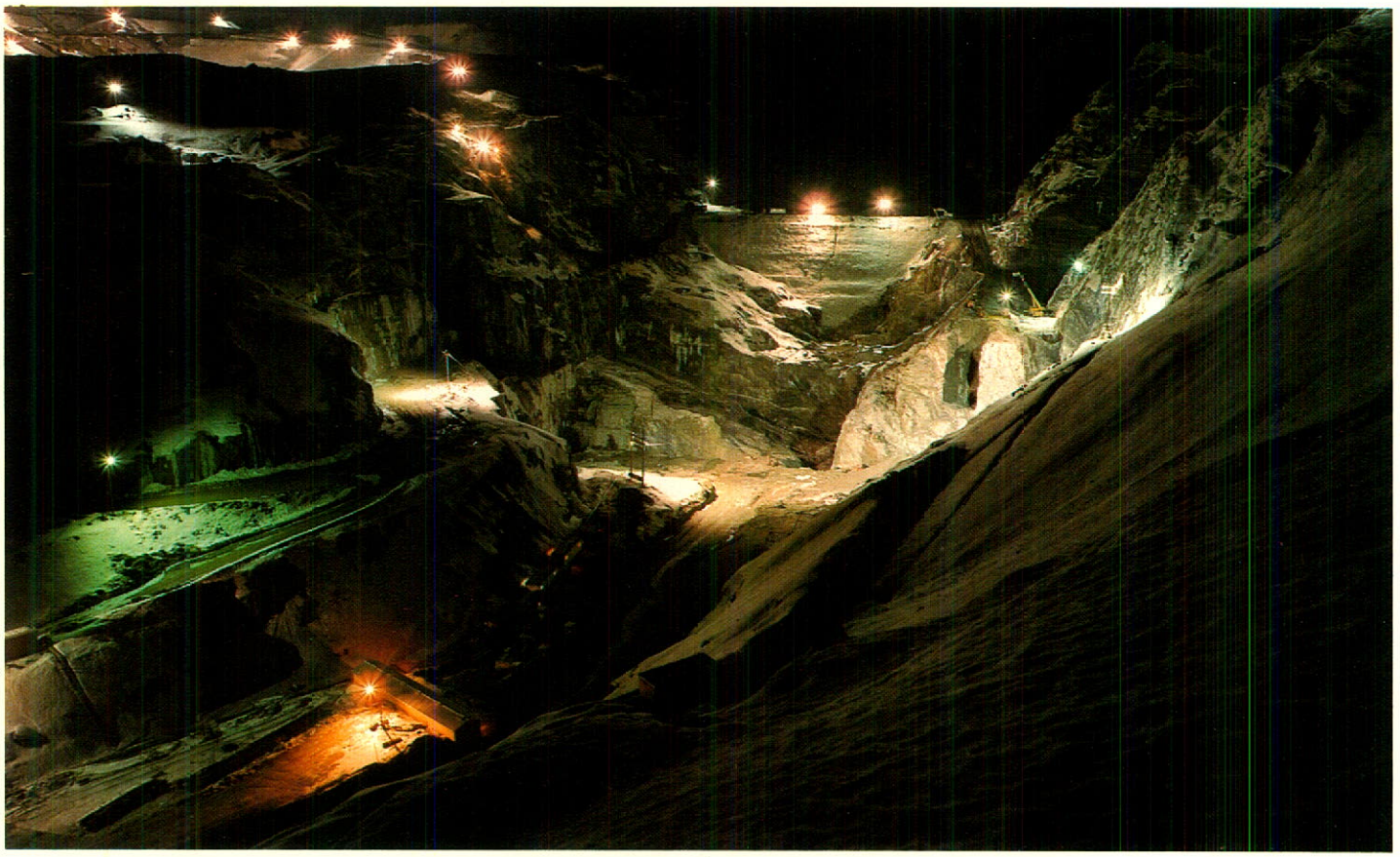
Expenditures on fixed assets for continuing operations totalled $755 million, compared with $719 million for the previous year.

Here is a breakdown of our expenditures for the year, by service and in broad categories:

	Millions
Electric service	
Generation	
Hydroelectric	
Revelstoke project	$208
Peace Canyon project	98
Seven Mile project	62
Other	26
Thermal	5
Transmission	
500 kV	99
Other	28
Transformation	71
Distribution	94
General	35
Gas service	27
Rail freight	2

The tenth and final unit at Gordon M. Shrum Generating Station on the Peace River began operating in February 1980. This unit, which completed the Portage Mountain development, increased the plant's total nameplate capacity to 2 416 000 kW.

At the Peace Canyon hydroelectric project, located about 22.5 km downstream of Gordon M. Shrum Generating Station, the 50.3-metre-high concrete gravity dam and the intake and spillway gates were completed, and the reservoir was filled. Electrical, mechanical and civil structures for the powerhouse, control building and switchyard also were completed. Problems with equipment delayed testing of the first two units, originally scheduled for service in late 1979 and early 1980, respectively. All four 175 000 kW units now are scheduled to be in service between June and October 1980.



Construction lamps illuminate snow-covered excavation at Revelstoke hydroelectric project, where work continued towards scheduled installation of first units in 1983.

A 500 kV transmission line from Gordon M. Shrum Generating Station via Peace Canyon to Williston Substation at Prince George was completed. This line connects Peace Canyon Generating Station with our province-wide electric transmission grid.

The first two 202 500 kW generating units at our Seven Mile hydroelectric project were placed in service in December 1979 and March 1980, well ahead of schedule. A third unit of identical capacity, which was nearing completion at year-end, is scheduled for service in September 1980. We have made provision for a fourth unit to be added later as required. This project, which includes a concrete gravity dam 85.5 m high and a surface powerhouse, will provide an ultimate capacity of 810 000 kW while flooding a relatively small area of fewer than 365 hectares. The project is located on the Canadian portion of the Pend d'Oreille River about 10 km upstream of the point where it meets the Columbia River.

Work continued on the Revelstoke hydroelectric project, situated about 5 km north of Revelstoke on the Columbia River. The project, with an ultimate capacity of 2 700 000 kW, will consist of a concrete gravity dam 161.5 m high and a surface powerhouse. Most work during the year involved excavation for the earthfill wing of the dam and construction of the cofferdams to enable excavation for the concrete dam and powerhouse to be undertaken in the former river channel. Design and manufacture of the project's first four turbines and generators is under way, and other equipment is being acquired. The first two 450 000 kW units are scheduled to be installed in late 1983, and the third and fourth in 1984. Two more will be added later, as required.

In the non-integrated system, diesel generating capacity was increased at Anahim Lake, Bella Bella, Bella Coola, Fort Nelson, McBride, Masset, Sandspit and Zeballos.

Design and surveying continued for the mainland-Vancouver Island 500 kV transmission interconnection, which will consist of two alternating current circuits between Cheekye Substation near Squamish on the mainland and Dunsmuir Substation near Qualicum Bay on Vancouver Island. The interconnection is needed to meet anticipated future growth in electric demand on the Island and alleviate the present critical supply situation. The first circuit is planned for service in 1983 and the second in 1984.

The first stage of the 500 kV transmission system on Vancouver Island was completed, connecting Dunsmuir Substation and the Victoria area to the Vancouver Island Terminal station on the east coast of the Island. It was energized initially at 230 kV.

A 230 kV line was completed from Soda Creek Substation near Williams Lake to 100 Mile House, improving supply and security of service to the 100 Mile House area.

Throughout our electric service area, substation capacities were increased and new stations installed to provide adequate supply for customers' growing requirements. In Quesnel, the new Red Bluff Substation was placed in service.

A net total of 465 km of transmission lines and 1 230 km of distribution lines was added to the electric system.

Engineering design proceeded for a 13 km, 76-centimetre diameter gas transmission pipeline from Roebuck Valve Station in Surrey, a major junction point of Hydro's gas transmission pipelines, to Tilbury Valve Station in Delta. The pipeline, which will parallel an existing pipeline for most of its route, is scheduled for installation in 1981. We are acquiring additional right-of-way as needed.

A total of 154 km of mains was added to the gas distribution system during the year to accommodate new customers.

Economic Growth

Industrial, commercial and residential development throughout our service area continued at a high rate during the year. A number of projects added significant new loads to B.C. Hydro's electric and natural gas systems, while other projects still in the planning stage will require substantial supplies of energy in the near future.

Developments in the forest products industry continued throughout the province. Sawmills and related wood products manufacturing plants were completed at Fraser Mills and Annacis Island in the Lower Mainland, and pulp mills were expanded at Mackenzie, Prince George and Quesnel in the Central Interior region.

First two generating units at Seven Mile hydroelectric project near Trail came on line well ahead of schedule.

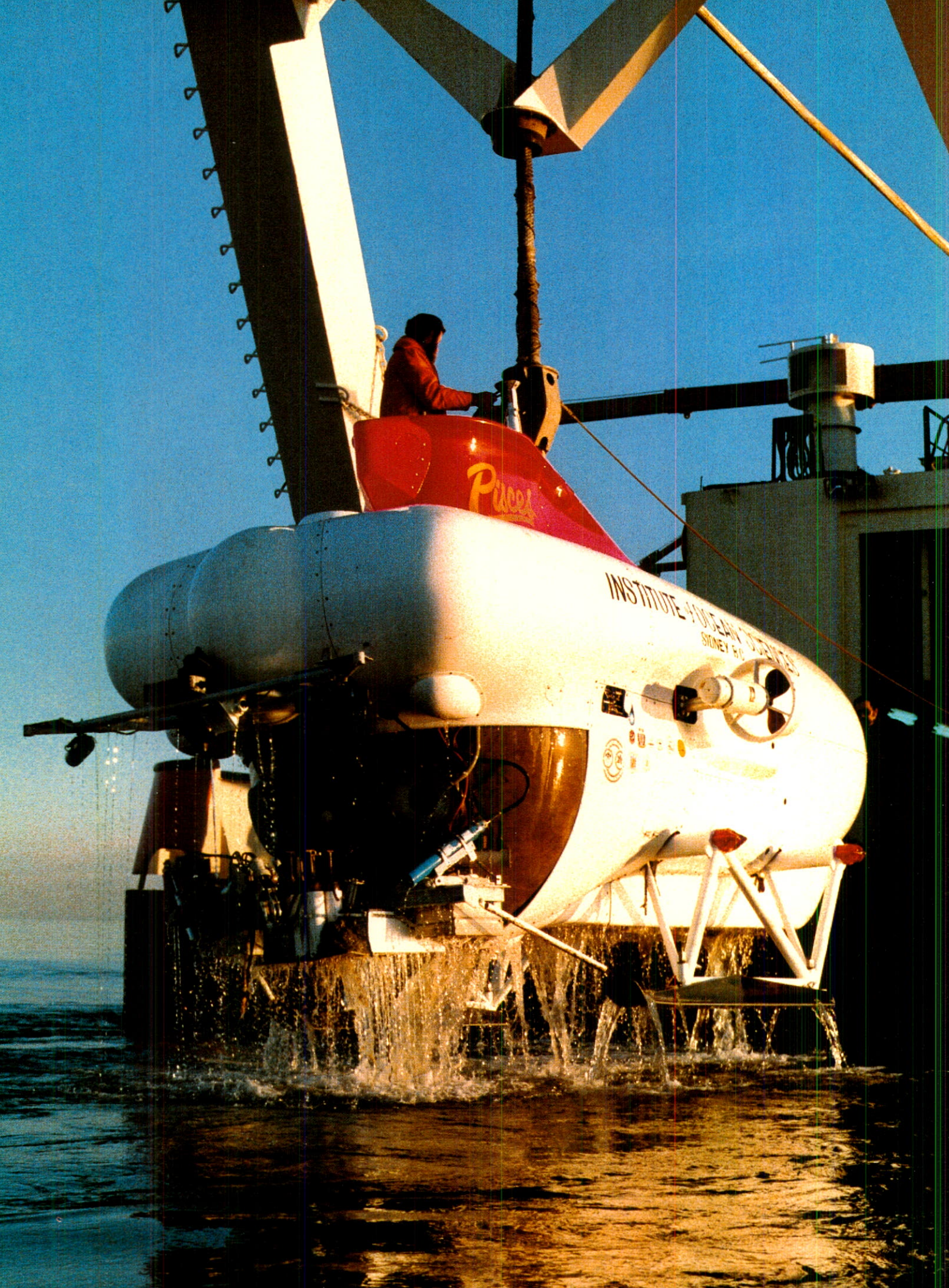
A large industrial and commercial complex is under way at Duke Point near Nanaimo on Vancouver Island. It will include forest products industry plants, deep sea docking and loading facilities and a major shopping centre.

A wood chipping dock and dry dock facilities were added on Burrard Inlet, and the provincial government announced plans to develop the Lonsdale Quay area in North Vancouver. The capacity of grain handling facilities at all major terminals in the Vancouver area has been upgraded.

A new mining development was begun in the Highland Valley in the South Interior and preparations were made for others at Alice Arm, Houston and Stewart in the North Coast region.

Commercial building was active during the year, notably in downtown Vancouver where 12 major office buildings were under construction. Typical of residential construction in many areas was the high level of activity experienced in Richmond, where 15 large subdivisions were started during the year, and new electric service connections averaged 100 per month.

During the year, Hydro also received a large number of inquiries from industry about future supplies of electricity. Prospective bulk loads include existing British Columbia industries and industries which are considering locating in this province.


Pisces

Planning

Engineering and environmental studies continued for a number of potential hydroelectric and conventional thermal generating projects.

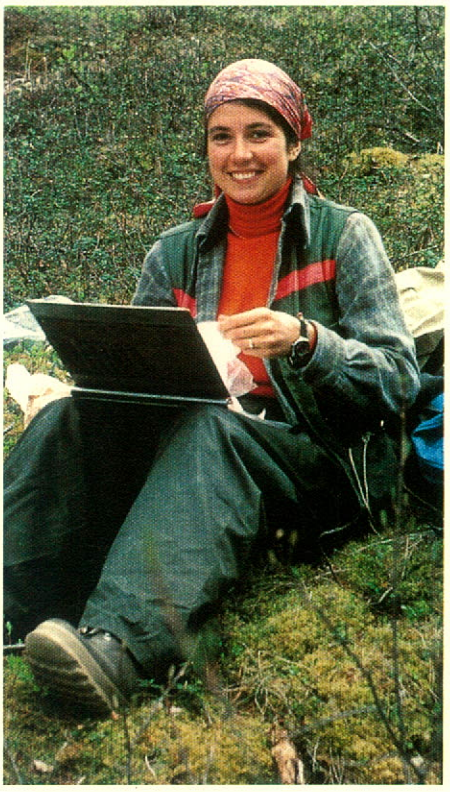
In October 1979, we announced our intention to seek regulatory approval for a hydroelectric project at Site C on the Peace River downstream from Peace Canyon and about 5 km from Fort St. John. Present plans call for Site C to be in service to meet anticipated load growth by 1987. Detailed impact studies were completed during the year, and preparation of an environmental impact statement neared completion. In response to requests by property owners in the area that would be affected, about 40% of the land required for the project had been acquired by the end of the year. Site C could provide sufficient energy to meet electric load growth for approximately two years in the late 1980s.

Engineering feasibility studies began and exploratory work was done at the dam site of a potential low-head hydroelectric project at Murphy Creek, on the Columbia River 3 km upstream from Trail. The project would use already-regulated flows of the Columbia and Kootenay rivers and could provide electric energy equal to about 75% of one year's new requirements in the late 1980s.

Detailed environmental and engineering studies continued towards defining an acceptable Kootenay Diversion project. This project, permitted after 1984 under terms of the Columbia River Treaty, would divert water from the Kootenay River into the Columbia River at Canal Flats and then into Mica reservoir.

Work continued on feasibility reports covering engineering and environmental studies of potential hydroelectric development in the Stikine-Iskut river basin in northwestern British Columbia. With two sites on the Stikine River and two on the Iskut River, such a project could provide approximately 2 700 000 kW of capacity and nearly as much energy as is produced by the Gordon M. Shrum Generating Station on the Peace River, which provided about 39% of B.C. Hydro's electric requirements during the year ended 31 March 1980.

Specially equipped submarine Pisces IV was used in underwater visual reconnaissance program as part of investigations into feasibility of natural gas pipeline to Vancouver Island.



Biologist Wynne Gorman prepares notes during wildlife studies, part of assessment of environmental impact of potential hydroelectric developments on the Stikine and Iskut rivers.

Preliminary investigations, mostly centred around assessment of environmental features of the area, continued for a potential hydroelectric development on the Liard River near the British Columbia-Yukon border. This project, with development of two sites, could provide 4 650 000 kW of capacity and nearly twice the annual output of the Gordon M. Shrum station.

Preparation of an environmental impact statement for an open pit coal mine and conventional thermal generating station in the upper Hat Creek valley between Lillooet and Cache Creek neared completion. The project now is envisaged as having an initial capacity of 1 000 000 kW with provision for expansion to 2 000 000 kW. Work related to licensing preparations for this project progressed towards a possible in-service date in 1989.

Feasibility studies were completed for a 600 000 kW thermal plant using waste by-products available from metallurgical coal mining operations in the Sparwood area of the East Kootenay region. We plan to collect meteorological data this year.

Studies were continued of potential transmission lines that would be required in connection with various generating projects being considered. In particular, transmission from the Liard basin requires extensive study to determine the best design in view of the long distances involved.

We continued to assess the feasibility of extending our natural gas service to Vancouver Island by underwater pipeline. Engineering and environmental studies have defined all major parameters for the project, and the conceptual design engineering phase will be completed by mid-1980. Environmental and socio-economic studies of the project are nearing completion. Environmental specialists, appropriate government agencies, and the general public have participated in the project's planning process. Various route alternatives are being examined for environmental, technical and economic concerns. Provincial government decisions on whether or not the pipeline will be built — and by whom — have not yet been announced.

During the year, the provincial government announced plans to introduce a new review process to evaluate all future major energy projects, including such developments as pipelines and refineries as well as B.C. Hydro projects. The government also announced that all future hydroelectric developments in British Columbia will be carried out by B.C. Hydro in accordance with policy directions set by the government.

Research and Development

In addition to studying conventional energy sources, B.C. Hydro continued to investigate developing technologies in the search for future sources of electricity, and to encourage their use where feasible.

We sponsored a Solar Fair in May 1979, distributed information about solar energy to interested members of the public and continued to monitor solar installations in the province during the year. A data logger and mini-computer will monitor the solar hot water system being installed at our new research and development centre in Surrey. Work was begun on a demonstration photovoltaic system at the centre.

Exploratory drilling for a geothermal energy source at Meager Creek near Pemberton continued to show encouraging results, with bottom hole temperatures exceeding the commercial minimum.

Agreement was reached during the year by the National Research Council of Canada, the British Columbia Ministry of Energy, Mines and Petroleum Resources, and B.C. Hydro to erect a 50 kW vertical axis wind turbine at Christopher Point, the southernmost part of Vancouver Island.

B.C. Hydro is pursuing with the National Coal Board of the United Kingdom plans to develop a demonstration plant using the pressurized fluidized bed technique, which promises efficient combustion of low-grade coal while providing more effective control of contaminant emissions.

Extra high voltage laboratory at new research and development centre in Surrey will enable Hydro to carry out studies involving electrical equipment rated at up to 500 000 volts.

Hot water bubbles up from small test hole at Meager Creek geothermal prospect near Pemberton, its heat discolouring rocks in stream.

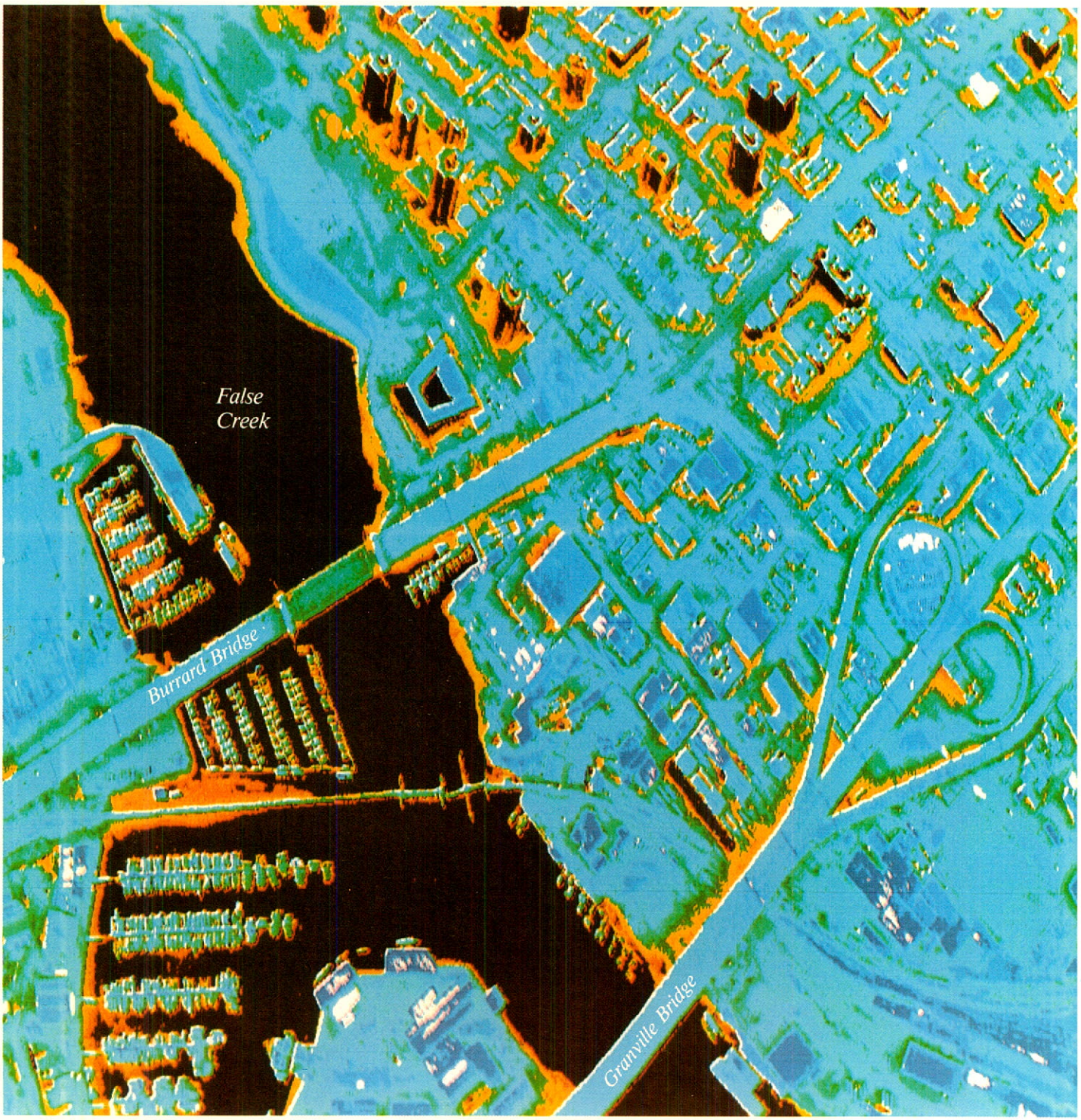
In conjunction with industry and the provincial government, environmental and engineering feasibility studies were completed of a potential 50 000 kW thermal generating plant using processed wood waste, commonly known as hog fuel, from a number of sawmills in the Quesnel area.

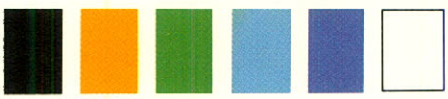
Hydro continued to cooperate with industry on co-generation of electricity wherever practical. During the year, the first of several major industrial co-generation units expected over the next several years came on line at B.C. Forest Products' pulp mill in Mackenzie.

In March 1980, B.C. Hydro's research and development staff moved into the new centre in Surrey which consolidated and expanded existing facilities and included new equipment for high-voltage electrical studies. The new centre has been designed to achieve economies in use of energy through advanced insulation systems and reduced window areas.

Tests were conducted at substations and generating stations to assess and find ways to reduce noise levels, and under transmission lines to measure electric field strength where concern has been expressed about inductive effects. Several projects related to the use or reclamation of oils were continued or completed.

Some of our research again was conducted under contract from the Canadian Electrical Association, whose joint programs permit the most effective use of the funds available to Canadian utilities for research.





Thermogram shows heat losses in part of downtown Vancouver. Largest losses are represented by the red-black end of the spectrum while green and blue tones indicate cooler open air areas or better-insulated buildings. False Creek shows up black because it was warmer than the air on the cold November night the picture was taken.

Obtained during infra-red scanning flights, thermograms are used by Hydro to help customers find opportunities to improve insulation and eliminate excessive ventilation. Though this colour thermogram is more dramatic, thermograms are usually shown in black, white and gray for more precise definition.

Conservation of Energy

We continued to provide a variety of programs to encourage and assist all categories of customers to conserve energy.

Aerial thermography was employed for the third consecutive year to help focus public attention on the need for adequate insulation. Infra-red scanning flights to detect excess loss of heat were conducted over 32 communities. Thermograms were displayed and interpreted to about 70 000 people in 12 cities to identify opportunities to improve insulation and eliminate excessive ventilation. All major centres in our service area are expected to be surveyed over the next few years.

By 31 March 1980, 7 080 customers had taken advantage of the program we began in 1977 to finance upgrading of home insulation or installation of multiple-glazed windows.

We continued to help commercial and industrial customers establish and maintain energy management and conservation programs by conducting audits of energy efficiency in large buildings such as schools, hotels and supermarkets, and by sponsoring seminars on efficient management of energy in industrial plants.

Programs to encourage conservation of energy within B.C. Hydro included the design of energy-efficient buildings and associated electrical and mechanical systems and improvement of structures and operating procedures in existing buildings.

We continued to participate in programs of the Canadian Electrical Association, Canadian Gas Association and Canadian Standards Association to improve the performance and efficiency of electric and gas appliances and equipment.

TOP: Residential advisory representative Watson Borthwick shows special metering equipment to one of the volunteer participants in Hydro's experimental program to reduce peak electric demand on Vancouver Island by remote radio control of water heaters.

ABOVE: Energy services co-ordinator Jack Olson explains control device for fluorescent light fixtures to school custodians at lighting seminar in Salmon Arm.

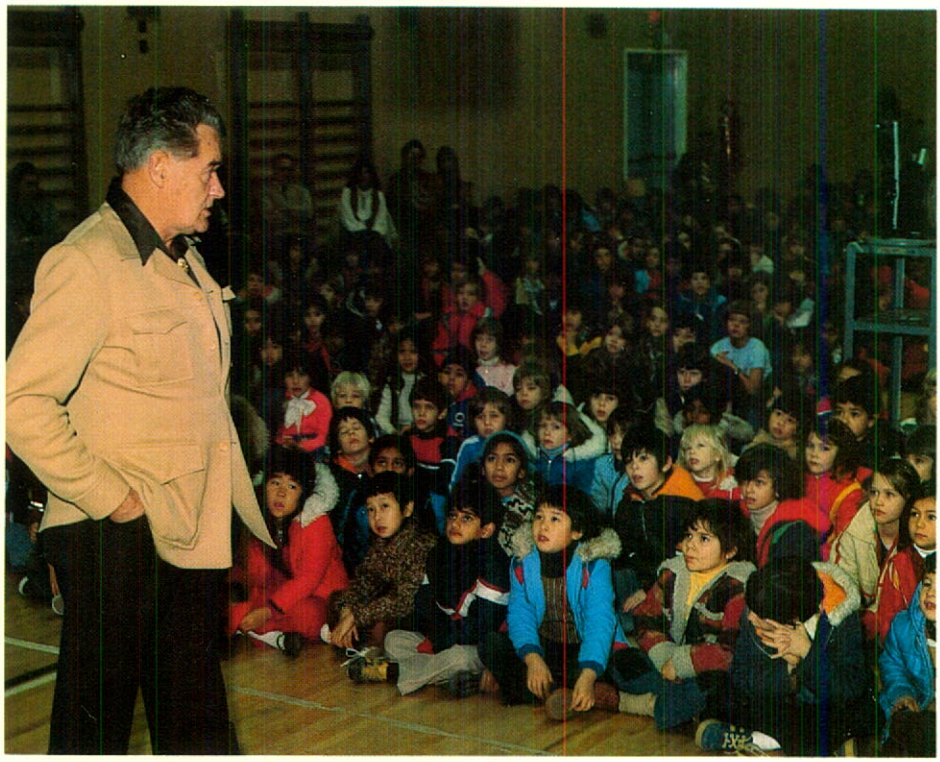
Community Activities

As a Crown corporation whose sole purpose is to serve the needs of British Columbians, B.C. Hydro recognizes its responsibility to minimize any adverse effects which its operations may have on people or the environment.

Hydro initiates dialogue with residents and representatives of areas that would be affected by potential major projects. We attend meetings to exchange views with government bodies and the public, to report on the status or results of investigations and studies, and to detail the actions and decisions of corporate management. At open community meetings, questions and comments on any aspect of potential projects may be raised with representatives of Hydro or its consultants. The purpose of these consultations is to make sure public concerns are identified and considered at an early stage as an integral part of the planning process.

The first year of Hydro's energy education program was completed successfully. The program is designed to help students understand the subject of energy, and particularly the need to conserve energy. A series of six films on alternate energy sources was completed and prints made available to the general public, schools, colleges and community television. During the year, Hydro undertook sponsorship of appearances and films by wilderness photographer Tommy Tompkins.

Hydro continued to emphasize safety, conducting programs to educate the general public, particularly children, about accident prevention measures, hazards, unsafe practices and general awareness of safety. Our "Be Electrically Alert" education program was presented to more than 65 000 elementary school students. It consists of films and demonstrations of the dangers of electricity and instruction in accident prevention. Other electric safety films designed for older audiences were widely circulated during the year. We also co-sponsored an electric safety film for the construction industry.



Wilderness photographer Tommy Tompkins speaks to a group of elementary school youngsters during one of his Hydro-sponsored appearances.

Debris removal programs and recreational development continued on various Hydro reservoirs. On the Arrow Lakes, we completed construction of boat launching ramps and transferred them, with adjacent recreation sites, to the Parks Branch of the provincial government. Work progressed on installation of a spawning channel on tributaries of the Arrow Lakes as part of the undertakings given at hearings for the Revelstoke project.

Plume dispersal tests were carried out as part of a program to evaluate the effects on air quality of operating Hydro's natural gas-fired Burrard Thermal Generating Station near Port Moody. The study is expected to be the most thorough and technically advanced yet carried out in the Burrard Inlet area, where a concentration of industry has resulted in much public concern about air quality.

In co-operation with a number of business, industry, government and community groups, B.C. Hydro co-sponsored a community forum, "Growth Alternatives for British Columbia," in Vancouver in April 1979.

At Revelstoke, we provided more than 200 residential units to alleviate the impact of our hydroelectric project work force on the community's social services.

A program for compensation of trappers affected by B.C. Hydro projects was formulated and agreed to by relevant professional and government bodies.

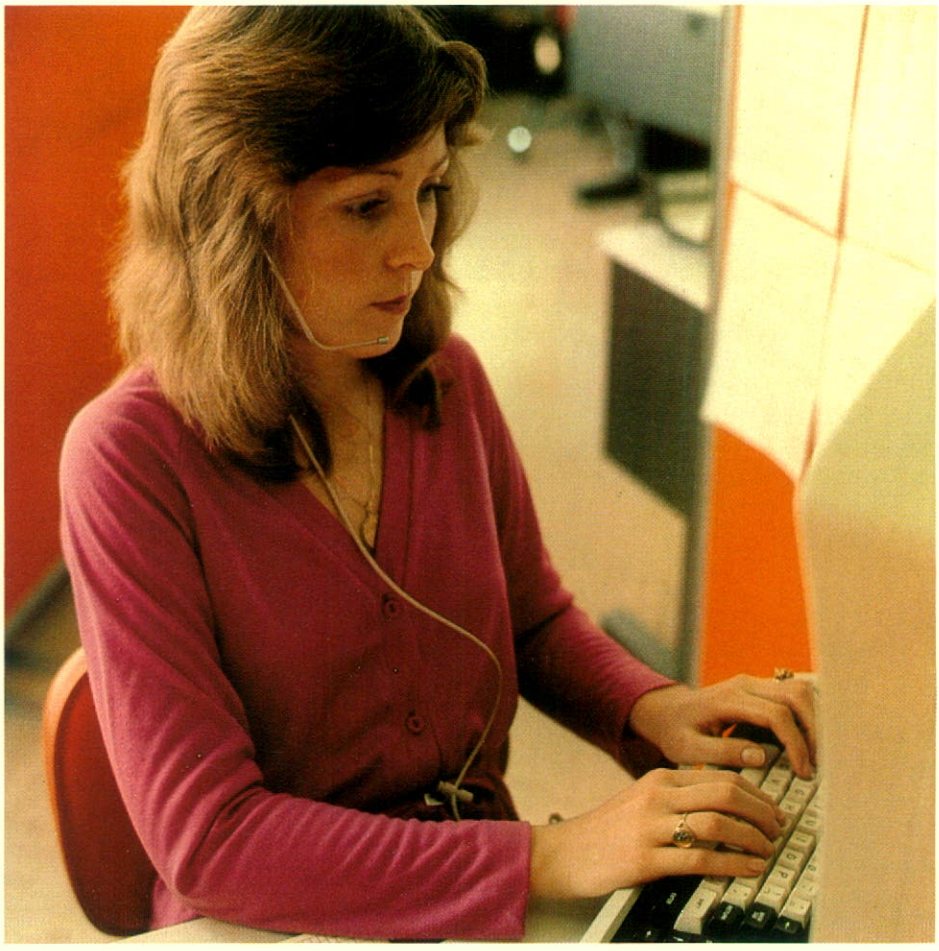
Employees

B.C. Hydro encourages employees to improve their skills through internal and external training courses and career counselling. More than 2 700 employees took advantage of these opportunities during the year.

A total of 32 journeymen in eight electrical trades graduated from our internal apprenticeship training program. We also provided training to the provincial Ministry of Labour for 119 linemen apprentices in British Columbia.

Contract settlements were reached with all major bargaining units during the year. Work stoppages prior to settlement of two major contracts resulted in some disruption of service to customers. Wage increases generally compared favourably with the average level of other settlements in the community. Eight agreements were reached, most having two-year terms.

Storeman Bill Schaefer operates forklift in storage yard at Victoria.



TOP: Computer operator Barry Leinbach files tapes in computer centre at Hydro's head office in Vancouver.

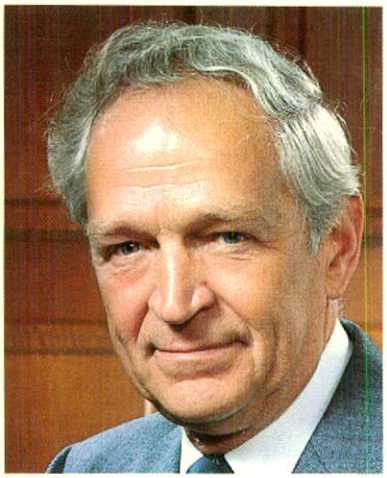
ABOVE: Customer enquiry clerk Lee Lawrence has instant access to account information to answer customer's question.

Corporate Organization

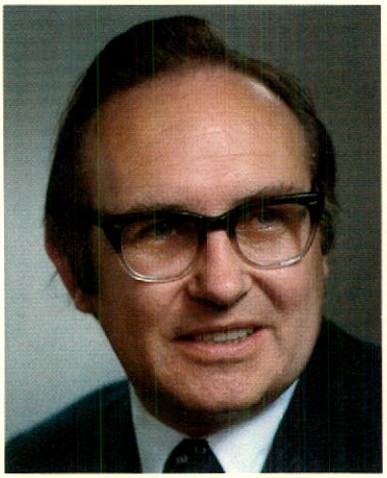
At 31 March 1980, there were four Directors of B.C. Hydro, including two members of the provincial Cabinet. On 24 November 1979, the Honourable Robert H. McClelland replaced the Honourable James J. Hewitt on the Board following a change in provincial Cabinet responsibilities in which Mr. McClelland was appointed Minister of Energy, Mines and Petroleum Resources and Minister responsible for B.C. Hydro. Mr. Robert W. Bonner, Q.C., Chairman, the Honourable Patrick L. McGeer, Minister of Universities, Science and Communications, and Mr. Charles W. Brazier, Q.C., served as Directors throughout the year.

On 1 October 1979, the senior management structure of B.C. Hydro was reorganized significantly to realign existing groups under two executive vice-presidents and create a new corporate planning and performance unit. We believe the change will enable Hydro to respond more effectively to increasing demands for more public involvement, provide senior management with more time to deal with corporate problems and improve corporate management control. Eric H. Martin, formerly Vice-President, Engineering, was appointed Executive Vice-President, Operations, responsible for engineering, electrical operations, gas operations, energy conservation and research and development. John P. Sheehan, formerly Vice-President, Administration and Finance, was appointed Executive Vice-President, Administration, responsible for finance, personnel, general corporate services and railway.

Corporate Management Committee

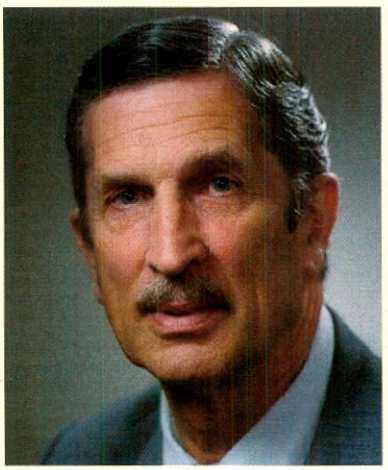


J. Norman Olsen
President

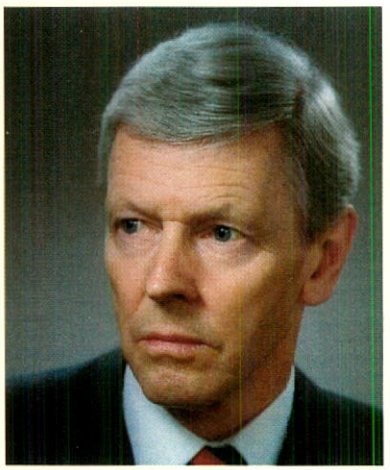


John P. Sheehan
Executive Vice-President
Administration

Eric H. Martin
Executive Vice-President
Operations



Charles W. Nash
Vice-President
Corporate Affairs
and Executive Assistant
to the Chairman



William D. Mitchell
Vice-President
and General Counsel

British Columbia Hydro and Power Authority Financial Statements

Management Report

The financial statements of B.C. Hydro have been prepared by management in accordance with accounting principles generally accepted in Canada for public utilities consistently applied. Because a precise determination of many assets and liabilities is dependent upon future events, the preparation of periodic financial statements necessarily involves the use of estimates and approximations. These have been made using careful judgement and with all information available up to June 1980. The financial statements have, in management's opinion, been properly prepared within reasonable limits of materiality and within the framework of the accounting policies summarized in Note 1 of the notes to the consolidated financial statements.

Report of the Auditors

The Lieutenant-Governor in Council,
Province of British Columbia:

We have examined the balance sheet of British Columbia Hydro and Power Authority as at 31 March 1980, and the statements of income and earnings employed in the business and changes in financial position for the year then ended and the statement of bonds and debentures as at 31 March 1980. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of British Columbia Hydro and Power Authority as at 31 March 1980 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Vancouver, British Columbia
23 June 1980

PRICE WATERHOUSE & CO.
Chartered Accountants

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Statement of Income and Earnings Employed in the Business

for the year ended 31 March 1980

	1980	1979
	(in thousands)	
Revenues	**$916,006**	$862,514
Expenses:		
Salaries, wages and employee benefits	**144,296**	132,144
Materials and services	**175,773**	164,602
Grants, school taxes and water rentals	**71,176**	66,444
Depreciation	**118,925**	106,292
Interest *(Note 6)*	**309,760**	283,002
	819,930	752,484
Net income for the year from continuing operations *(Note 9)*	**96,076**	110,030
Loss for the year on passenger transportation operations *(Notes 8 and 9)*	**(55,918)**	(61,407)
Net income for the year before extraordinary item	**40,158**	48,623
Extraordinary item:		
Loss on discontinuance of passenger transportation service *(Note 8)*	**(37,900)**	—
Net income for the year	**2,258**	48,623
Earnings employed in the business:		
At beginning of year	**277,343**	228,720
At end of year	**$279,601**	$277,343

1979 figures have been reclassified to conform with the presentation used for 1980 (Note 8).

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Balance Sheet

as at 31 March 1980

	1980	1979
	(in thousands)	
FIXED ASSETS:		
Fixed assets in service, at cost	**$5,991,376**	$5,339,303
Less—		
Accumulated depreciation	**1,063,730**	980,507
	4,927,646	4,358,796
Unfinished construction	**1,042,777**	1,030,256
	5,970,423	5,389,052
CURRENT ASSETS:		
Cash	**1,393**	1,439
Temporary investments, at cost *(Note 2)*	**315,743**	392,484
Accounts receivable and unbilled revenues	**163,523**	166,722
Materials and supplies, at average cost	**53,632**	49,572
Prepaid expenses	**1,444**	2,022
	535,735	612,239
OTHER ASSETS:		
Mortgages and other deferred accounts receivable	**6,598**	3,468
Insurance fund	**5,000**	5,000
Unamortized discount and expense on bonds and debentures	**30,012**	28,706
	41,610	37,174
	$6,547,768	$6,038,465

APPROVED BY THE DIRECTORS:

Charles W. Brazier, Q.C., Director

Robert W. Bonner, Q.C., Director

	1980	1979
	(in thousands)	
LONG-TERM LIABILITIES:		
Bonds and debentures, per statement *(Note 3)*	**$5,175,727**	$4,739,482
Deferred liabilities	**35,555**	35,270
	5,211,282	4,774,752
PARITY DEVELOPMENT BONDS, payable on demand *(Notes 3 and 4)*	**25,000**	50,000
CURRENT LIABILITIES:		
Bank indebtedness	**8,928**	12,674
Accounts payable	**227,670**	201,230
Accrued interest	**139,588**	122,788
Bond and debenture payments due within one year—		
Sinking fund instalments	**48,181**	48,100
Maturities, less sinking fund	**46,693**	—
	471,060	384,792
CONTRIBUTIONS ARISING FROM COLUMBIA RIVER TREATY	**414,612**	423,826
CONTRIBUTIONS IN AID OF CONSTRUCTION	**146,213**	127,752
EARNINGS EMPLOYED IN THE BUSINESS	**279,601**	277,343
COMMITMENTS *(Note 7)*		
	$6,547,768	$6,038,465

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Statement of Changes in Financial Position

for the year ended 31 March 1980

	1980	1979
	(in thousands)	
SOURCE OF FUNDS:		
Continuing operations—		
Net income for the year	$ 96,076	$110,030
Charges not affecting current funds:		
Depreciation	118,925	106,292
Other	666	1,019
Funds provided by continuing operations	215,667	217,341
Passenger transportation operations—		
Loss for the year	(55,918)	(61,407)
Charges not affecting current funds:		
Depreciation	2,800	3,865
Funds required by passenger transportation operations	(53,118)	(57,542)
Total funds provided by operations	162,549	159,799
Bonds	563,040	473,722
Contributions in aid of construction	24,364	18,815
Return of payment in respect of litigation	—	36,500
Miscellaneous	(2,136)	2,610
	$747,817	$691,446
APPLICATION OF FUNDS:		
Fixed assets	$754,800	$721,611
Sinking funds—		
Instalments	48,887	43,771
Income *(Note 6)*	33,106	25,568
Retirement of bonds and debentures	—	7,341
Retirement of Parity Development Bonds	25,000	25,000
Extraordinary item — portion of loss on discontinuance of passenger transportation service affecting working capital	2,022	—
	863,815	823,291
DECREASE IN WORKING CAPITAL exclusive of changes in current portion of bonds and debentures	115,998	131,845
	$747,817	$691,446

1979 figures have been reclassified to conform with the presentation used for 1980 (Note 8).

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Statement of Bonds and Debentures

as at 31 March 1980

Interest Rate %	Series	Date of Maturity		1980	1979
PAYABLE IN CANADIAN CURRENCY:				*(in thousands)*	
Issued by British Columbia Hydro and Power Authority—					
Bonds:					
3¼	B	1 October	1979	$ —	$ 10,000
9¾	EH	16 December	1981	**100,000(1)**	100,000(1)
8⅞	DT	2 January	1982	**25,000**	25,000
5¼	A	1 May	1982	**32,496**	32,496
9¾	DV	3 December	1982	**100,000**	100,000
8⅝	DW	19 February	1985	**100,000(2)**	100,000(2)
12½	FA	19 February	1985	**200,000**	—
5.46	W-A	1 February	1987	**80,396**	80,396
5.71	W-B	1 February	1988	**95,001**	95,001
6.68	W-C	3 February	1989	**65,862**	65,862
7.32	WD	2 September	1989	**68,396**	68,396
7.77	WE	2 March	1991	**110,949**	110,949
5¾	U	18 April	1991	**40,000**	40,000
5¾	X	1 July	1991	**5,000**	5,000
6¼	AG	1 December	1991	**20,000**	20,000
7.10	WF	2 March	1992	**109,182**	109,182
6	AJ	15 March	1992	**25,000**	25,000
6	BA	29 May	1992	**2,500**	2,500
6.10	AL-A	2 July	1992	**10,000**	10,000
6¼	AM	4 July	1992	**25,000**	25,000
6¼	BB	19 July	1992	**4,000**	4,000
6½	AP	1 November	1992	**20,000**	20,000
6¾	BC	1 February	1993	**10,200**	10,200
6¾	Z-S	15 February	1993	**3,300**	3,300
6¾	Z-T	15 February	1993	**4,200**	4,200
5	C	1 March	1993	**15,000**	15,000
7.33	WG	9 March	1993	**73,847**	73,847
6⅞	AR	29 March	1993	**10,000**	10,000
5¼	D	1 May	1993	**25,000**	25,000
5¼	F	1 June	1993	**10,000**	10,000
7¼	AS	1 June	1993	**10,000**	10,000
7¼	BD	2 July	1993	**5,500**	5,500
7	AU	5 August	1993	**10,000**	10,000
7	AV	1 October	1993	**10,000**	10,000
5¼	G	15 October	1993	**15,000**	15,000
7	BE	1 December	1993	**12,800**	12,800
7	Z-G	15 December	1993	**7,000**	7,000
5¼	H	15 December	1993	**10,000**	10,000
5¼	J	1 March	1994	**10,000**	10,000
7.54	WH	4 March	1994	**91,105**	91,105
7½	AW	31 March	1994	**10,000**	10,000
7½	AX	2 June	1994	**25,000**	25,000
5¼	L	2 July	1994	**10,000**	10,000
7⅝	AY	1 October	1994	**30,000**	30,000
8	CA	1 December	1994	**10,000**	10,000
5¼	M	15 December	1994	**20,000**	20,000
8	CB	30 December	1994	**15,000**	15,000
8.78	WJ	7 February	1995	**66,609**	66,609
5¼	N	15 March	1995	**10,000**	10,000
8	CC	31 March	1995	**20,000**	20,000
8	CD	31 March	1995	**5,000**	5,000
9½	ET	1 June	1995	**25,000**	25,000
8.92	WK	2 July	1995	**26,546**	26,546
8	CE	1 August	1995	**10,000**	10,000
	Carried forward			**$1,854,889**	$1,664,889

Statement of Bonds and Debentures *(continued)*

as at 31 March 1980

Interest Rate %	Series	Date of Maturity		1980	1979
				(in thousands)	
	Brought forward			**$1,854,889**	$1,664,889
5⅜	S	15 September	1995	**10,000**	10,000
7.54	CF	30 December	1995	**15,000**	15,000
6.90	CH	30 March	1996	**10,000**	10,000
6.90	CJ	30 March	1996	**20,000**	20,000
7.25	CK	1 October	1996	**20,000**	20,000
7.25	CL	1 October	1996	**5,000**	5,000
6.93	CM	15 December	1996	**20,000**	20,000
6.93	CN	15 December	1996	**5,000**	5,000
6.90	CP	1 March	1997	**7,000**	7,000
7.38	CR	15 June	1997	**10,000**	10,000
7.76	CT	3 November	1997	**25,000**	25,000
8.95	WL	10 November	1997	**40,353**	40,353
7.76	CU	15 November	1997	**4,000**	4,000
7.63	CV	15 December	1997	**5,000**	5,000
7.63	CW	15 December	1997	**25,000**	25,000
10¾	EB	29 December	1997	**29,000**	29,000
7.48	CX	30 March	1998	**25,000**	25,000
9.44	WM	9 June	1998	**51,833**	51,833
8	CZ	3 July	1998	**20,000**	20,000
8	DA	1 September	1998	**30,000**	30,000
8⅛	DB	1 November	1998	**13,000**	13,000
8⅛	DC	1 November	1998	**7,000**	7,000
8.30	DD	1 December	1998	**7,000**	7,000
8.30	DE	15 December	1998	**5,000**	5,000
8.30	DF	15 December	1998	**15,000**	15,000
8.55	DG	15 February	1999	**15,000**	15,000
8.55	DH	15 February	1999	**5,000**	5,000
8.70	DJ	29 March	1999	**25,000**	25,000
8.70	DK	29 March	1999	**5,000**	5,000
10.20	VI	10 May	1999	**12,000**	—
9.45	DL	15 May	1999	**25,000**	25,000
9.45	DM	15 May	1999	**5,000**	5,000
10½	DR	30 August	1999	**12,000**	12,000
10.40	DS	15 October	1999	**15,000**	15,000
11½	VJ	10 December	1999	**5,000**	—
10	DU	2 January	2000	**50,000**	50,000
9¾	DZ	10 February	2000	**10,000**	10,000
9⅞	DX	1 May	2000	**45,000**	45,000
10½	EE	18 August	2000	**10,000**	10,000
10½	ED	1 September	2000	**50,000**	50,000
10	EC	15 October	2000	**50,000(3)**	50,000(3)
10	EF	17 February	2001	**50,000**	50,000
10⅜	EG	29 March	2001	**60,000**	60,000
9	EL	24 January	2002	**50,000**	50,000
9½	EO	2 June	2002	**100,000**	100,000
9¼	EP	15 August	2002	**100,000**	100,000
9¼	EQ	1 November	2002	**75,000**	75,000
9⅜	ER	15 December	2002	**100,000**	100,000
9¾	ES	1 March	2003	**100,000**	100,000
9¾	EU	5 July	2003	**150,000**	150,000
10	EV	1 December	2003	**150,000**	150,000
10¼	EW	15 February	2004	**100,000**	100,000
10	EX	4 June	2004	**100,000**	—
10¾	EY	3 October	2004	**150,000**	—
12¾	EZ	19 February	2005	**100,000**	—
	Carried forward			**$4,003,075**	$3,446,075

Interest Rate %	Series	Date of Maturity		1980	1979
					(in thousands)
	Brought forward			**$4,003,075**	$3,446,075
Issued by the former British Columbia Electric Company Limited—					
First Mortgage Bonds, after deducting bonds redeemed in accordance with sinking fund requirements:					
3¾	"J"	1 June	1980	**7,234**	7,761
4¼	"K"	1 February	1981	**13,959**	14,996
5	"L"	1 February	1982	**19,167**	20,687
5⅛	"M"	2 January	1988	**23,054**	25,395
5½	"N"	1 March	1989	**15,048**	16,496
6½	"O"	1 April	1990	**17,618**	18,865
5¾	"P"	1 May	1991	**9,180**	9,743
4	"F"	1 July	1991	**700**	881
Perpetual Callable Bonds:					
4				**171**	179
4¼				**63**	67
4½				**86**	92
4¾				**254**	262
5				**229**	247
5½				**134**	145
25-year Callable Bonds:					
4	AA	1 August	1986	**11,829**	11,821
4¼	AB	1 August	1986	**10,937**	10,933
4½	AC	1 August	1986	**14,914**	14,908
4¾	AD	1 August	1986	**26,159**	26,151
5	AE	1 August	1986	**24,771**	24,753
5½	AF	1 August	1986	**14,867**	14,855
Issued by the former British Columbia Power Commission—					
Bonds:					
5	MC	15 September	1982	**5,149**	5,149
3¾	C	15 September	1991	**3,000**	3,000
4	D	21 May	1992	**1,000**	1,000
4	E	15 June	1992	**1,000**	1,000
4	F	15 September	1992	**1,500**	1,500
5	MD	15 September	1992	**18,724**	18,724
5	N	15 September	1992	**10,000**	10,000
Total payable in Canadian currency				**4,253,822**	3,705,685
PAYABLE IN UNITED STATES CURRENCY:					
Issued by British Columbia Hydro and Power Authority—					
Bonds:					
7¾	EM	15 May	1985	**75,000**	75,000
5⅝	Y	2 July	1991	**38,750**	40,000
5⅞	AH	2 January	1992	**50,000**	50,000
6¼	AK	1 June	1992	**50,000**	50,000
9⅝	EJ	15 July	1996	**500,000**	500,000
10¼	DN	1 October	1999	**100,000**	100,000
9⅝	DY	1 June	2005	**150,000**	150,000
8⅝	EK	1 December	2006	**175,000**	175,000
8⅜	EN	15 June	2007	**200,000**	200,000
	Carried forward			**$1,338,750**	$1,340,000

Statement of Bonds and Debentures *(continued)*

as at 31 March 1980

Interest Rate %	Series	Date of Maturity		1980	1979
					(in thousands)
	Brought forward			**$1,338,750**	$1,340,000
Issued by the former British Columbia Power Commission—					
	Bonds:				
4	G	1 November	1988	**10,000**	10,000
3¼	H	15 July	1989	**6,300**	6,300
	Debentures:				
3¾	K	15 June	1986	**20,000**	20,000
4⅜	L	15 April	1987	**25,000**	25,000
3⅞	P	1 February	1988	**20,000**	20,000
Total payable in United States currency				**1,420,050**	1,421,300
Exchange premium at date of issue				**16,459**	16,554
				1,436,509	1,437,854
Total bonds and debentures outstanding				**5,690,331**	5,143,539
Less— Sinking funds on deposit with Trustee, Minister of Finance for the Province of British Columbia				**419,730**	355,957
				5,270,601	4,787,582
Less— Bond and debenture payments due within one year:					
Sinking fund instalments				**48,181**	48,100
Maturities, less sinking fund				**46,693**	—
				94,874	48,100
				$5,175,727	$4,739,482

(1) $50,000,000 payable 16 December 1980 (selected by lot).
(2) $50,000,000 payable 19 February 1984 (selected by lot).
(3) Redeemable at option of holder on 15 October 1983.

Total bond and debenture maturity and sinking fund requirements for the years ending 31 March 1981 to 1985 are estimated as follows *(in millions)*:

	Principal Amount of Maturities	Funds Accumulated to Maturity Date in Sinking Funds	Cash Requirements		
			Maturities	Sinking Funds	Total
1981	$ 71.2	$24.5	$ 46.7	$ 48.2	$ 94.9
1982	97.7	39.1	58.6	84.9	143.5
1983	132.5	61.3	71.2	95.0	166.2
1984	50.0	11.7	38.3	101.6	139.9
1985	250.0	13.7	236.3	106.5	342.8

Notes to Financial Statements

as at 31 March 1980

Note 1

SIGNIFICANT ACCOUNTING POLICIES:

B.C. Hydro is a crown corporation of the Province of British Columbia. The accounting policies of the corporation conform to accounting principles generally accepted in Canada for public utilities. A description of significant accounting policies follows.

Fixed assets and depreciation—

Fixed assets consist principally of land, water rights, storage dams, plants for the generation, transmission and distribution of electricity and gas, freight railway and rolling stock.

Fixed assets include the cost of plant financed by contributions in aid of construction and contributions arising from the Columbia River Treaty. Contributions in aid of construction, which include grants for rural electrification from the Government of the Province of British Columbia and amounts paid by customers towards construction of plant, are being amortized over the estimated service lives of the related assets, and the credit resulting therefrom is offset against the corresponding provision for depreciation. Contributions arising from the Columbia River Treaty are being amortized over the remaining term of the Treaty, which expires in 2025, and the credit resulting therefrom is offset against and is equal to the annual provision for depreciation of the related assets.

B.C. Hydro charges interest to unfinished construction at rates equivalent to the cost of borrowing funds.

The depreciation policy of B.C. Hydro is to charge the original cost of fixed assets to income over the estimated service lives of the assets. Depreciation is provided on all depreciable assets in service at the beginning of each year and is computed on the straight-line method. Composite rates by service were as follows—

	1980	1979
	(%)	(%)
Electric	**2.61**	2.56
Gas	**2.70**	2.65
Rail freight	**3.64**	3.20

Insurance—

B.C. Hydro generally follows a policy of self-insurance for damage to plant and equipment and for general liability, and any losses incurred are charged to income. An insurance fund of $5,000,000, invested in government and municipal bonds and short-term deposits with financial institutions, is maintained to provide funding for uninsured losses up to that amount. To protect against losses in excess of $5,000,000, B.C. Hydro carries catastrophe insurance which provides coverage up to $100,000,000.

Insurance coverage on major projects under construction is purchased either by B.C. Hydro or by its contractors as required by B.C. Hydro. Fire insurance coverage on certain plant and equipment is also purchased to comply with trust deed requirements.

Unamortized discount and expense on bonds and debentures—

These costs are amortized by charges to income over the life of the respective issues.

Rural electrification assistance grant—

B.C. Hydro received a grant of $3,000,000 from the Provincial Government for rural electrification assistance. These funds were used to offset operating losses of electric systems purchased or constructed in isolated areas with such funds and to improve and extend electric service in rural areas.

Note 1 (continued): *Foreign exchange—*

The liability for bonds and debentures payable in United States currency is translated to Canadian currency at the rates of exchange prevailing at the date the debt was incurred. Translated at the rates prevailing at 31 March 1980, the liability for bonds and debentures payable in United States currency would have been increased by approximately $262,000,000 (1979 — $210,000,000). Current assets and current liabilities in United States currency, including bonds and debentures payable within one year, are translated at the rate of exchange prevailing at the date of the balance sheet. Foreign exchange adjustments are included in income.

Note 2
TEMPORARY INVESTMENTS:

	1980	1979
	(in thousands)	
Deposits with banks and other financial institutions	**$106,967**	$265,014
Notes of banks and other financial institutions	**205,279**	123,282
Bonds held for sinking fund	**3,497**	4,188
	$315,743	$392,484

Note 3
GUARANTEE BY PROVINCE OF BRITISH COLUMBIA:

The Government of the Province of British Columbia has unconditionally guaranteed the principal of and premium, if any, and interest on B.C. Hydro's bonds, debentures and Parity Development Bonds.

Note 4
PARITY DEVELOPMENT BONDS:

	1980	1979
	(in thousands)	
8½% Series DP due 1 September 1979	**$ —**	$25,000
8½% Series EA due 1 September 1980	**25,000**	25,000
	$25,000	$50,000

Note 5
PENSION PLANS:

Employees of B.C. Hydro are covered under contributory pension plans. It is B.C. Hydro's practice to obtain periodic actuarial valuations of the plans for purposes of determining annual pension cost and funding requirements. Current service costs are provided for and funded when incurred. Past service pension costs and accrued deficits arising from plan amendments, changes in actuarial assumptions and indexing supplements to existing pensioners are provided for and funded over periods and in amounts recommended by the actuary.

A preliminary actuarial report prepared as of 31 December 1979 indicates an evaluated accrued deficit in the principal plan as of that date of approximately $41,000,000. This deficit arose principally as a result of plan improvements introduced over the years, including minimum pension benefit provisions for present members and indexed supplements to existing pensioners. It is being funded by continuation of payments of $394,000 and $3,061,000 per annum over remaining periods of 2 years and 20 years respectively.

As at 31 March 1980, none of the Lieutenant-Governor in Council, the Minister of Municipal Affairs and the Superannuation Commissioner had exercised any powers under the Metro Transit Operating Company Act in relation to pensions of former B.C. Hydro urban and interurban transportation employees. It is not expected that the exercise of such powers will have any significant effect on the information shown above.

Note 5 (continued): The charge to income from continuing operations in respect of pension plans, including B.C. Hydro's share of Canada Pension Plan costs, for the year ended 31 March 1980 was $10,508,000 (1979 — $9,641,000).

Note 6
INTEREST:

	1980	1979
	(in thousands)	
Interest on bonds and debentures	**$468,485**	$424,556
Amortization of discount and expense	**2,654**	2,574
Interest charged to construction	**(94,833)**	(72,790)
Interest charged to passenger transportation operations	**(3,886)**	(3,931)
	372,420	350,409
Less—		
Income from sinking fund investments held by Trustee	**33,106**	25,568
Income from temporary investments	**30,208**	42,629
Income credited to passenger transportation operations	**(654)**	(790)
	62,660	67,407
	$309,760	$283,002

Note 7
COMMITMENTS:

Purchase commitments and contracts of B.C. Hydro for capital projects aggregated approximately $1,150,000,000 at 31 March 1980.

Note 8
PASSENGER TRANSPORTATION:

In accordance with the provisions of the Urban Transit Authority Act and the Metro Transit Operating Company Act and with the written directions of the Minister of Municipal Affairs issued under the latter Act, B.C. Hydro discontinued its public passenger transportation service effective 1 April 1980 and transferred and was in the process of transferring to the Urban Transit Authority and the Metro Transit Operating Company its interest in those assets identified in the directions. B.C. Hydro will be reimbursed for the costs of services provided to the Metro Transit Operating Company under an agreement covering a period not exceeding two years.

The estimated loss to B.C. Hydro resulting from the discontinuance of the passenger transportation service, amounting to $37,900,000, has been shown as an extraordinary item in the statement of income and earnings employed in the business. Passenger transportation revenues and expenses for the year ended 31 March 1979 have been reclassified to "Loss for the year on passenger transportation operations" on the statement of income and earnings employed in the business to conform with the presentation adopted for the year ended 31 March 1980. The statement of changes in financial position for the year ended 31 March 1979 has been reclassified accordingly. The passenger transportation assets, comprising mainly fixed assets and inventories, have been removed from their former classifications and included at a nominal value with accounts receivable in the balance sheet. No reclassification of comparable assets at 31 March 1979 has been made. Particulars on passenger transportation revenues, expenses and assets appear in Note 9.

Note 9
SEGMENT INFORMATION:

B.C. Hydro is engaged in the operation of three principal continuing services: generation, transmission and distribution of electricity; distribution of gas; and provision of a railway freight service. Until 31 March 1980, the corporation was also engaged in the operation of a passenger transportation service (Note 8).

Most expenses are directly attributable to specific segments. Common expenses are allocated among the segments using appropriate bases established by regular review and analysis. Revenues and expenses include transactions between continuing services and passenger transportation.

Identifiable assets are those assets that are used in each segment's operations. Corporate assets are principally temporary investments and unamortized discount and expense on bonds and debentures.

Year ended 31 March 1980 *(in millions)*	Electric	Gas	Rail Freight	Sundry	Continuing Operations Combined	Passenger Transportation *(Note 8)*
Revenues	$ 717.4	$172.6	$23.5	$ 2.5	$ 916.0	$ 40.5
Expenses:						
Salaries, wages and employee benefits	112.5	22.3	9.5	—	144.3	77.7
Materials and services	63.3	106.9	5.6	—	175.8	11.5
Grants, school taxes and water rentals	65.4	4.3	1.5	—	71.2	1.2
Depreciation	109.0	8.2	1.7	—	118.9	2.8
Total expenses	350.2	141.7	18.3	—	510.2	93.2
Operating income before interest	367.2	30.9	5.2	2.5	405.8	(52.7)
Interest charges *(Note 6)*	342.6	25.0	3.9	.9	372.4	3.9
Interest income *(Note 6)*	(57.8)	(4.2)	(.7)	—	(62.7)	(.7)
Interest charged to operations	284.8	20.8	3.2	.9	309.7	3.2
Net income (loss) for the year before extraordinary item	$ 82.4	$ 10.1	$ 2.0	$ 1.6	$ 96.1	$(55.9)
Identifiable assets as at 31 March 1980	$5,814.9	$305.1	$50.6	$14.1	$6,184.7	
Corporate assets as at 31 March 1980					363.1	
Total assets as at 31 March 1980					$6,547.8	
Expenditures on fixed assets	$ 726.4	$ 26.9	$ 1.5	$ —	$ 754.8	

Note 9 Segment Information (continued):

Year ended 31 March 1979 *(in millions)*	Electric	Gas	Rail Freight	Sundry	Continuing Operations Combined	Passenger Transportation *(Note 8)*
Revenues	$ 670.5	$170.1	$20.7	$ 1.2	$ 862.5	$ 44.2
Expenses:						
Salaries, wages and employee benefits	102.3	20.8	9.1	—	132.2	81.1
Materials and services	53.5	106.3	4.8	—	164.6	16.4
Grants, school taxes and water rentals	61.3	3.7	1.4	—	66.4	1.1
Depreciation	97.6	7.4	1.3	—	106.3	3.9
Total expenses	314.7	138.2	16.6	—	469.5	102.5
Operating income before interest	355.8	31.9	4.1	1.2	393.0	(58.3)
Interest charges *(Note 6)*	322.8	23.4	3.4	.9	350.5	3.8
Interest income *(Note 6)*	(62.3)	(4.5)	(.7)	—	(67.5)	(.7)
Interest charged to operations	260.5	18.9	2.7	.9	283.0	3.1
Net income (loss) for the year	$ 95.3	$ 13.0	$ 1.4	$ .3	$ 110.0	$ (61.4)
Identifiable assets as at 31 March 1979	$5,210.0	$287.0	$52.0	$11.5	$5,560.5	$ 43.7
Corporate assets as at 31 March 1979					434.3	—
Total assets as at 31 March 1979					$5,994.8	$ 43.7
Expenditures on fixed assets	$ 686.1	$ 24.2	$ 7.4	$ .8	$ 718.5	$ 3.1

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Financial Statistics *(in millions)*

year ended 31 March

	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970
Sources of Revenue											
Electric	$ 717.4	670.5	611.2	466.9	344.5	299.5	270.0	236.9	213.2	194.6	164.1
Gas	172.6	170.1	135.9	104.5	89.5	77.9	60.9	55.4	51.9	47.7	41.2
Rail freight	23.5	20.7	18.3	16.5	15.1	13.8	12.5	11.2	10.9	8.7	8.7
Sundry	2.5	1.2	0.3	0.9	2.1	0.3	0.3	0.2	0.2	0.4	0.1
Provincial Government special subsidy	—	—	—	32.6	32.6	—	—	—	—	—	—
Total	$ 916.0	862.5	765.7	621.4	483.8	391.5	343.7	303.7	276.2	251.4	214.1
Disposition of Revenue											
Salaries, wages and employee benefits	$ 144.3	132.2	125.7	114.5	103.5	79.1	60.4	51.3	47.8	40.9	38.1
Materials and services	175.8	164.6	138.9	107.7	91.4	78.6	69.5	47.5	46.1	41.1	36.6
Grants, school taxes and water rentals	71.2	66.4	53.4	45.4	38.9	28.4	24.7	21.9	19.7	18.3	16.7
Depreciation	118.9	106.3	97.3	78.3	70.4	63.5	59.9	56.0	51.3	48.4	43.0
Interest charged to operations	309.7	283.0	261.6	186.9	142.0	116.0	104.0	100.3	90.4	83.0	76.6
Total	819.9	752.5	676.9	532.8	446.2	365.6	318.5	277.0	255.3	231.7	211.0
Loss on passenger transportation operations	55.9	61.4	61.3	50.0	36.3	21.5	10.0	4.7	3.5	3.0	3.1
	875.8	813.9	738.2	582.8	482.5	387.1	328.5	281.7	258.8	234.7	214.1
Loss on discontinuance of passenger transportation operations	37.9	—	—	—	—	—	—	—	—	—	—
Employed in the business	2.3	48.6	27.5	38.6	1.3	4.4	15.2	22.0	17.4	16.7	—
Total	$ 916.0	862.5	765.7	621.4	483.8	391.5	343.7	303.7	276.2	251.4	214.1
Fixed Assets											
Fixed assets in service, at cost	$5,991.3	5,339.3	4,920.5	4,541.3	3,606.7	3,254.4	3,002.3	2,887.1	2,423.8	2,242.2	2,131.1
Accumulated depreciation	1,063.7	980.5	877.9	784.3	706.1	634.1	568.7	511.9	463.5	417.2	371.1
	$4,927.6	4,358.8	4,042.6	3,757.0	2,900.6	2,620.3	2,433.6	2,375.2	1,960.3	1,825.0	1,760.0
Bonds and Debentures	$5,175.7	4,739.5	4,337.5	3,604.7	2,990.3	2,514.7	2,055.1	1,862.4	1,726.4	1,588.3	1,443.8
Expenditures on Fixed Assets	$ 754.8	721.6	641.1	548.5	590.5	463.8	332.3	230.2	217.9	216.0	189.6

Figures for 1970 to 1979 have been reclassified to conform with presentation used for 1980.
Revenues and expenses include transactions between continuing services and passenger transportation.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Operating Statistics

year ended 31 March

	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970
Electric											
Generating nameplate capacity at year-end (rated kW in thousands)*											
Hydro	**6 588**	5 883	5 883	5 449	3 882	3 618	3 318	3 318	2 814	2 455	2 455
Thermal	**1 360**	1 363	1 293	1 301	1 299	1 104	1 061	1 041	1 038	1 059	1 056
Total	**7 948**	7 246	7 176	6 750	5 181	4 722	4 379	4 359	3 852	3 514	3 511
Peak one-hour demand, integrated system (kW in thousands)	**5 198**	5 091	4 621	4 258	4 063	3 791	3 578	3 499	2 970	2 769	2 499
Customers at year-end (in thousands)	**1 010**	984	952	917	875	843	801	765	726	690	652
Electricity sold (kW·h in millions)											
Sales in British Columbia	**26 203**	25 564	24 106	22 882	20 511	20 688	19 902	17 938	15 953	14 369	13 351
Other sales	**1 077**	1 478	3 908	1 961	85	808	2 038	1 165	221	464	305
Total	**27 280**	27 042	28 014	24 843	20 596	21 496	21 940	19 103	16 174	14 833	13 656
Increase (decrease) over previous year (%)	**0.9**	(3.5)	12.8	20.6	(4.2)	(2.0)	14.9	18.1	9.0	8.6	11.6
By class of customer (%)											
Residential	**28**	27	25	27	30	27	24	25	28	28	27
General	**33**	33	30	31	36	32	30	31	34	32	32
Bulk	**34**	34	30	33	33	36	36	37	36	36	37
Other systems	**1**	1	1	2	1	1	1	1	1	1	2
Export to United States**	**4**	5	14	7	—	4	9	6	1	3	2
Residential Service											
Average annual kW·h use per customer	**8 736**	8 747	8 620	8 452	8 370	7 928	7 694	7 365	7 342	6 949	6 651
Average revenue per kW·h (cents)	**3.5**	3.4	3.1	2.7	2.3	2.1	1.9	1.9	1.9	1.9	1.7
Lines in service											
Distribution (kilometres)	**38 355**†	37 125	36 129	35 093	34 089	32 701	31 378	29 735	27 861	26 579	25 186
Transmission (circuit kilometres)	**15 258**	14 793	14 259	14 082	12 733	12 424	12 435	12 374	12 040	11 555	10 824

**Excludes electricity available from other systems. Rated capacity has been exceeded on occasion.*
***Less than ½ of 1% 1976.*
†Estimated

Gas											
One-day capacity at year-end (terajoules)											
Mainland—firm pipeline contracts	**380**	422	422	422	422	411	344	281	253	259	249
—plant	**105**	105	105	105	105	105	105	105	105	105	26
Greater Victoria—plant	**6**	6	6	6	5	6	6	6	6	6	5
Peak one-day demand (terajoules)											
Mainland system—including interruptible	**507**	510	404	377	430	368	384	365	346	310	292
—excluding interruptible	**486**	508	402	365	364	356	331	354	323	291	207
Greater Victoria system	**2**	2	2	2	2	2	3	3	3	2	2
Customers at year-end (in thousands)	**298**	286	278	270	259	249	238	227	215	205	197
Gas sold (terajoules)											
Total	**88 074**	87 733	83 273	80 006	80 556	77 099	75 105	68 443	63 382	58 401	51 146
Increase (decrease) over previous year (%)	**0.4**	5.4	4.1	(0.7)	4.5	2.8	9.6	8.0	8.5	14.2	3.1
Average revenue per gigajoule (dollars)	**1.95**	1.93	1.62	1.30	1.11	1.01	0.81	0.81	0.82	0.81	0.80

Rail Freight											
(tonnes in thousands)	**2 603**	2 536	2 397	2 393	2 321	2 494	2 539	2 246	2 364	1 996	2 237

Passenger Transportation											
Vehicles in operation at year-end											
—buses	**662**	658	668	664	648	558	447	335	326	353	340
—trolley coaches	**311**	285	311	312	312	301	293	293	298	298	296
—sea-buses	**2**	2	2	—	—	—	—	—	—	—	—
—total	**975**	945	981	976	960	859	740	628	624	651	636
Passengers carried (in millions)	**104.7**	100.8	100.3	106.4	104.0	94.3	85.5	76.7	72.6	65.9	78.7
Revenue kilometres run (in millions)	**59.5**	59.7	58.8	58.6	54.1	44.5	38.0	32.9	32.2	31.0	34.1
Passenger revenue per kilometre (cents)	**64.2**	55.1	47.2	44.7	42.8	47.1	50.0	52.6	51.9	48.7	44.3

Employees At Year-End*											
Regular	**11 330**	11 618	11 611	11 339	11 226	10 361	8 945	7 474	7 173	7 205	7 056
Temporary	**865**	932	946	1 001	807	1 255	1 080	772	669	481	810
Total	**12 195**	12 550	12 557	12 340	12 033	11 616	10 025	8 246	7 842	7 686	7 866

**Includes passenger transportation employees.*

British Columbia Hydro and Power Authority

DIRECTORS:
Robert W. Bonner, *Q.C.*
*Charles W. Brazier, *Q.C.*
The Honourable James J. Hewitt *(to 24 November 1979)*
The Honourable Robert H. McClelland *(from 24 November 1979)*
The Honourable Patrick L. McGeer

** Member of the Audit Committee*

OFFICERS:
Robert W. Bonner, *Q.C., Chairman*
J. Norman Olsen, *President and Chief Operating Officer*
Eric H. Martin, *Executive Vice-President, Operations*
John P. Sheehan, *Executive Vice-President, Administration*
William D. Mitchell, *Secretary*
Elizabeth B. Fulwell, *Associate Secretary*
Raymond H. Hunt, *Chief Engineer*

GROUP ORGANIZATION:

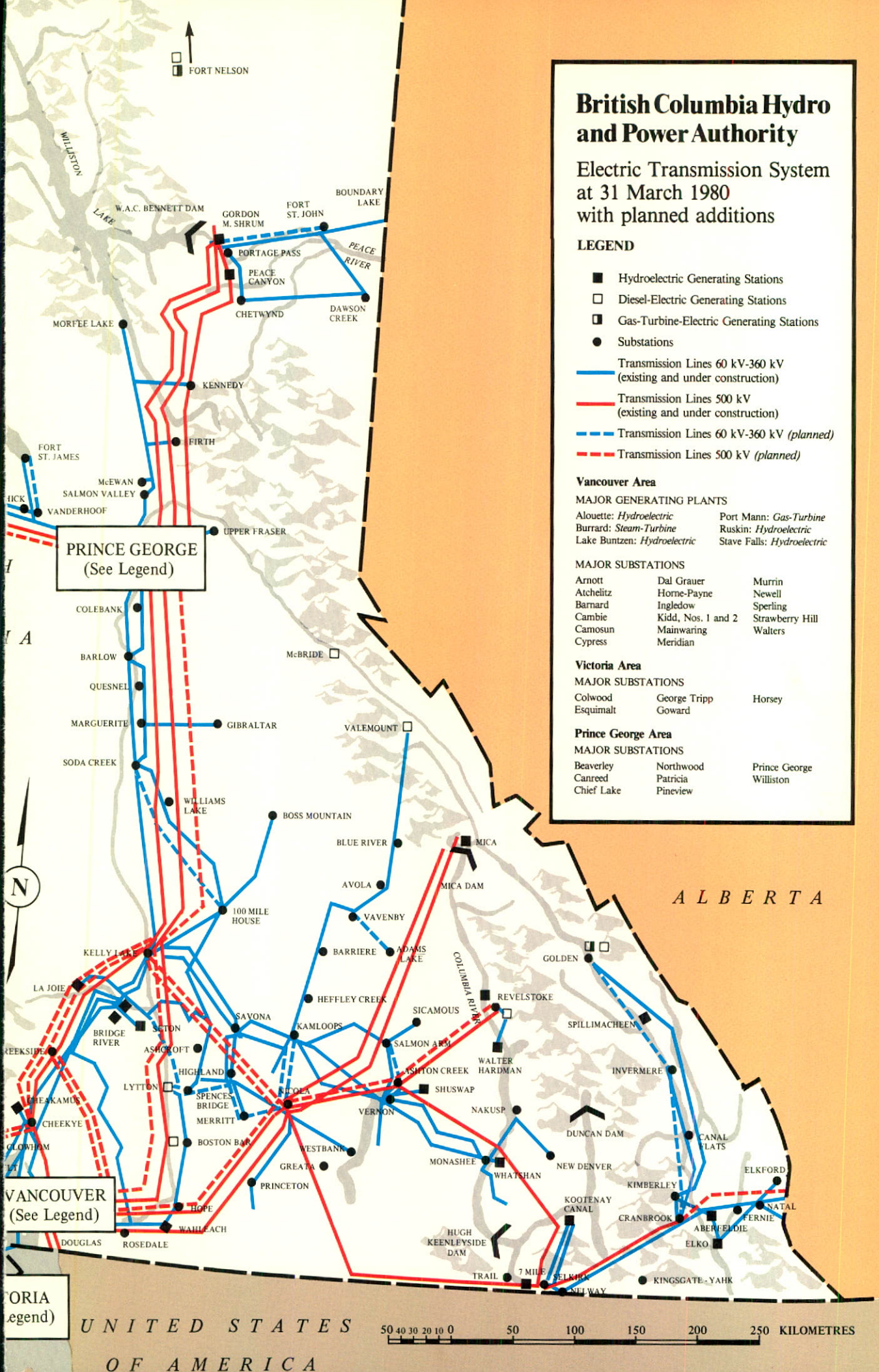
OFFICE OF THE CHAIRMAN
W.D. Mitchell, *Vice-President and General Counsel*

OFFICE OF THE PRESIDENT
CORPORATE AFFAIRS
C.W. Nash, *Vice-President and Executive Assistant to the Chairman*
D.K. Coupar, *Assistant Vice-President, Corporate Communications*
DIVISION MANAGER:
J.A. MacCarthy, *Public and Customer Relations*
CORPORATE PLANNING
L.E. Wight, *Vice-President*

OFFICE OF THE EXECUTIVE VICE-PRESIDENT, OPERATIONS
ELECTRICAL OPERATIONS
W.A. Best, *Vice-President*
DIVISION MANAGERS:
W.A. Bateman, *Fraser Valley*
E.T. Davis, *North Coast*
T.V. Farmer, *South Interior*
W.B. Gale, *Operations Administration*
W.D. Gill, *Operations Engineering*
D.J. McLennan, *Metroplitan Vancouver*
G.J. Roper, *Vancouver Island*
P.D. Swoboda, *Central Interior*
ENGINEERING
W.M. Walker, *Vice-President*
R.H. Hunt, *Chief Engineer*
DIVISION MANAGERS:
E. Crowley, *Transmission Projects*
M.A. Favell, *Engineering Services*
H.J. Goldie, *System Engineering*
F.J. Patterson, *Hydroelectric Generation Projects*
E.T. Quirk, *Station Projects*
GAS OPERATIONS AND ENERGY CONSERVATION
R.K. Kidd, *Vice-President*
DIVISION MANAGERS:
K.S. Henderson, *Gas Transmission and Distribution*
A.H. MacPherson, *Gas Engineering*
T.J. Newton, *Energy Conservation*
RESEARCH AND DEVELOPMENT
H.M. Ellis, *Director*

OFFICE OF THE EXECUTIVE VICE-PRESIDENT, ADMINISTRATION
FINANCE
L.E. Beard, *Vice-President*
DIVISION MANAGERS:
R.E. Avery, *Treasurer (from 1 June 1980)*
I.R.A. Mills, *Treasurer (to 1 June 1980)*
G.A. Woodbury, *Comptroller*
GENERAL CORPORATE SERVICES
T.A. Nordstrom, *Vice-President*
DIVISION MANAGERS:
E.S. Collins, *Properties*
R. Johnson, *Purchasing and Supply*
D.G. McKillop, *General Services*
R.J. Steele, *Computer and Management Systems*
PERSONNEL
J.J. Donnelly, *Vice-President (from 12 May 1980)*
DIVISION MANAGERS:
R.H. Downey, *Personnel*
B.A. Hawrysh, *Manpower Planning and Development*
P.J. McAllister, *Labour Relations*
INTERNAL AUDITOR, J.S. English
RAILWAY OPERATIONS
G.I. Stevenson, *Manager*

FOLD OUT MAP OF ELECTRIC TRANSMISSION SYSTEM


British Columbia Hydro and Power Authority
Electric Transmission System at 31 March 1980 with planned additions
LEGEND
Hydroelectric Generating Stations
Diesel-Electric Generating Stations
Gas-Turbine-Electric Generating Stations
Substations
Transmission Lines 60 kV-360 kV (existing and under construction)
Transmission Lines 500 kV (existing and under construction)
Transmission Lines 60 kV-360 kV (planned)
Transmission Lines 500 kV (planned)
Vancouver Area
MAJOR GENERATING PLANTS
Alouette: Hydroelectric
Burrard: Steam-Turbine
Lake Buntzen: Hydroelectric
Port Mann: Gas-Turbine
Ruskin: Hydroelectric
Stave Falls: Hydroelectric
MAJOR SUBSTATIONS
Arnott
Atchelitz
Barnard
Cambie
Camosun
Cypress
Dal Grauer
Horne-Payne
Ingledow
Kidd, Nos. 1 and 2
Mainwaring
Meridian
Murrin
Newell
Sperling
Strawberry Hill
Walters
Victoria Area
MAJOR SUBSTATIONS
Colwood
Esquimalt
George Tripp
Goward
Horsey
Prince George Area
MAJOR SUBSTATIONS
Beaverley
Canreed
Chief Lake
Northwood
Patricia
Pineview
Prince George
Williston
FORT NELSON
WILLISTON LAKE
W.A.C. BENNETT DAM
GORDON M. SHRUM
FORT ST. JOHN
BOUNDARY LAKE
PEACE RIVER
PORTAGE PASS
PEACE CANYON
CHETWYND
DAWSON CREEK
MORFEE LAKE
KENNEDY
FIRTH
FORT ST. JAMES
McEWAN
SALMON VALLEY
VANDERHOOF
UPPER FRASER
PRINCE GEORGE (See Legend)
COLEBANK
BARLOW
McBRIDE
QUESNEL
MARGUERITE
GIBRALTAR
VALEMOUNT
SODA CREEK
WILLIAMS LAKE
BOSS MOUNTAIN
BLUE RIVER
MICA
AVOLA
MICA DAM
VAVENBY
100 MILE HOUSE
BARRIERE
ADAMS LAKE
COLUMBIA RIVER
GOLDEN
KELLY LAKE
LA JOIE
HEFFLEY CREEK
REVELSTOKE
SICAMOUS
SAVONA
KAMLOOPS
SPILLIMACHEEN
BRIDGE RIVER
SETON
ASHCROFT
SALMON ARM
WALTER HARDMAN
HIGHLAND
ASHTON CREEK
INVERMERE
LYTTON
SHUSWAP
SPENCES BRIDGE
MERRITT
VERNON
NAKUSP
DUNCAN DAM
CANAL FLATS
CHEEKYE
BOSTON BAR
WESTBANK
MONASHEE
NEW DENVER
ELKFORD
GREATA
WHATSHAN
KIMBERLEY
PRINCETON
KOOTENAY CANAL
NATAL
FERNIE
CRANBROOK
ABERFELDIE
HOPE
HUGH KEENLEYSIDE DAM
ELKO
VANCOUVER (See Legend)
WAHLEACH
DOUGLAS
ROSEDALE
TRAIL
7 MILE
KINGSGATE - YAHK
ALBERTA
UNITED STATES OF AMERICA
50 40 30 20 10 0 50 100 150 200 250 KILOMETRES


TELEGRAPH CREEK
ATLIN
DEASE LAKE
EDDONTENAJON
ALASKA (U. S. A.)
STEWART
KITSAULT
HAZELTON
AIYANSH
SMITHERS
PRINCE RUPERT
OLDFIELD
RUPERT
TERRACE
TELKWA
BABINE
MASSET
SKEENA
HOUSTON
FALLS RIVER
KITIMAT
BURNS LAKE
GLENANNAN
FRASER LAKE
QUEEN CHARLOTTE ISLANDS
SANDSPIT
BRITISH
COLUMBIA
BELLA COOLA
BELLA BELLA
ANAHIM LAKE
TATLA LAKE
PORT HARDY
KEOGH
PORT McNEILL
JEUNE LANDING
DUNCAN BAY
ZEBALLOS
CAMPBELL RIVER
TAHSIS VILLAGE
GOLD RIVER
POWELL RIVER
FOREST VIEW
PUNTLEDGE
ASH RIVER
DUNSMUIR
AHOUSAT
ALBERNI
TOFINO
NANAIMO
GEORGIA
BAMFIELD
VANCOUVER ISLAND
VANCOUVER ISLAND TERMINAL
JORDAN RIVER
VICT
(See

Corporate Information

HEAD OFFICE
970 Burrard Street, Vancouver,
British Columbia, Canada, V6Z 1Y3

AUDITORS
Price Waterhouse & Co.

BANKERS
Canadian Imperial Bank of Commerce

REGISTRARS
Securities issued by
British Columbia Hydro
and Power Authority:
Canadian issues:
B.C. Hydro
United States issues:
The Canadian Bank
of Commerce
Trust Company, New York

Securities issued by the former
British Columbia Electric
Company Limited:
Callable Bonds:
Montreal Trust Company
First Mortgage Bonds:
Montreal Trust Company
Debentures:
The Royal Trust Company

Securities issued by the former
British Columbia Power Commission:
B.C. Hydro

*LEFT: **Energy potential of the wind will be assessed through performance of this 50-kilowatt vertical axis wind turbine, erected at Christopher Point on southern Vancouver Island as a result of agreement between National Research Council of Canada, British Columbia Ministry of Energy, Mines and Petroleum Resources and B.C. Hydro.***

*BACK COVER: **Excess water from spring freshet and heavy rains is passed through spillway at Seven Mile hydroelectric project near Trail. The recently-completed project began generating electricity during the year.***

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