

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY



ELEVENTH ANNUAL REPORT - Year Ended 31 March 1973

THE BUSINESS OF B.C. HYDRO AND THE AREAS SERVED

Electric Service

Generation and transmission of electricity.

Distribution of electricity throughout areas of British Columbia containing more than 90% of the population of the Province.

Gas Service

Distribution of natural gas in Greater Vancouver and in the Fraser Valley.

Distribution of liquid petroleum gas-air in Greater Victoria.

Passenger Transportation Service

Urban bus service in Greater Vancouver and in Greater Victoria.

Interurban bus service in Greater Vancouver, in the Fraser Valley, between Vancouver and Victoria and between Vancouver and Nanaimo.

Rail Freight Service

Rail freight operations in Greater Vancouver and in the Fraser Valley.

The front cover shows Mica Dam, the last of three storage projects in British Columbia constructed by B.C. Hydro under terms of the Columbia River Treaty. Regulation of the Columbia River at Mica completes the task of controlling the flood waters of one of the world's largest and most erratic rivers.

Water stored in the Mica reservoir will be used to generate electricity, commencing in 1976. The underground powerhouse will have an ultimate capacity of 2.4 million kilowatts.

CONTENTS

Letter of Transmittal - - - - -	1
Directors and Officers - - - - -	2
Chairman's Letter - - - - -	3
The Year in Brief - - - - -	4
Results of Operations - - - - -	5
Electric Service - - - - -	7
Sales of Electricity - - - - -	7
Regional Development - - - - -	7
Rural Electrification - - - - -	8
Generation and Supply of Electricity - - - - -	9
Security Deposits - - - - -	9
Gas Service - - - - -	10
Transportation Services - - - - -	11
Urban Transportation - - - - -	11
Interurban Transportation - - - - -	11
Rail Freight - - - - -	11
Cost of Providing Services - - - - -	12
Financing - - - - -	13
Columbia River Treaty Funds - - - - -	13
Construction Program - - - - -	14
Peace River Project - - - - -	15
Columbia River Treaty Storage Projects - - - - -	16
Other Major Electric Service Plant Additions - - - - -	17
Major Contracts - - - - -	19
Environment - - - - -	20
Board of Directors - - - - -	21
Employees - - - - -	21
Report of the Auditors - - - - -	23
Financial Statements - - - - -	23
Financial Statistics - - - - -	30
Operating Statistics - - - - -	31
Communities Served by B.C. Hydro - - - - -	32
Map of Electric Transmission System - - - - -	Insert Facing 32



THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA

MINISTER OF LANDS, FORESTS, AND WATER RESOURCES

VICTORIA

19 June 1973

The Honourable Walter S. Owen, Q.C., LL.D.,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the
Annual Report of British Columbia Hydro and Power Authority
for the year ended 31 March 1973.

R. A. Williams

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Head Office: 970 Burrard Street, Vancouver 1, British Columbia, Canada

DIRECTORS AND OFFICERS

DAVID CASS-BEGGS *Chairman*

THE HONOURABLE JAMES G. LORIMER

JOHN H. STEEDE

THE HONOURABLE ROBERT A. WILLIAMS

JAMES W. WILSON

GEOFFREY G. WOODWARD *Secretary*

ELIZABETH B. FULWELL *Assistant Secretary*

Auditors: PRICE WATERHOUSE & CO.

Bankers: CANADIAN IMPERIAL BANK OF COMMERCE

Securities issued by British Columbia Hydro and Power Authority:

Registrar, Canadian issues: B.C. HYDRO

Registrar, United States issues: THE CANADIAN BANK OF COMMERCE
TRUST COMPANY, New York

Securities issued by the former British Columbia Electric Company Limited:

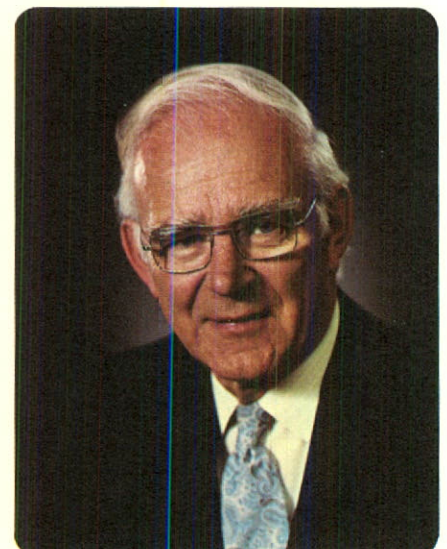
Registrar, Callable Bonds: MONTREAL TRUST COMPANY

Registrar and Trustee, First Mortgage Bonds: MONTREAL TRUST COMPANY

Registrar and Trustee, Debentures: THE ROYAL TRUST COMPANY

Securities issued by the former British Columbia Power Commission:

Registrar: B.C. HYDRO



DAVID CASS-BEGGS
Chairman

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

OFFICE OF THE CHAIRMAN

970 BURRARD STREET

VANCOUVER 1, B. C.

18 June 1973

The Honourable R.A. Williams,
Minister of Lands, Forests, and Water Resources,
Parliament Buildings,
Victoria, British Columbia.

Dear Sir:

I have pleasure in presenting the Annual Report of British Columbia Hydro and Power Authority for the year ended 31 March 1973.

Hydroelectric power continued to provide an increasing share of the energy used in British Columbia. Sales of electricity in the Province, by B.C. Hydro, increased 12.6% over the previous year.

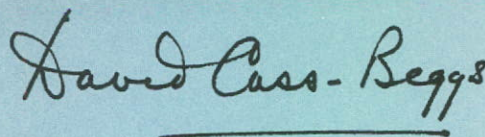
The ever-growing demand for energy in British Columbia clearly illustrates the need for long-range planning for the best utilization of all sources of energy. At the same time, increased emphasis must be placed on protecting and improving the quality of life of the people in British Columbia. B.C. Hydro is accepting the challenge of constructing and operating facilities in a manner that is least harmful to the natural environment of the Province.

While the year's operations ended with a surplus of some \$21 million, inflation, increased wages and salaries, and environmental costs indicate that a deficit must be anticipated within the next few years. As a result, the Board of Directors decided to establish a reserve for the stabilization of rates, and transferred \$10 million from the net income to the new reserve account.

Dr. Gordon M. Shrum retired on 31 December 1972, after having served as Chairman of British Columbia Hydro and Power Authority and the former British Columbia Electric Company Limited since August 1961. The Board of Directors commends Dr. Shrum for his outstanding contribution to B.C. Hydro throughout his years of service.

The Board wishes to acknowledge the loyal and effective service of the thousands of B.C. Hydro employees throughout the Province.

Respectfully submitted,



Chairman.

THE YEAR IN BRIEF

- Gross revenues for the year were \$334,921,599, exceeding expenses by \$21,192,058.
- Kilowatt-hours of electricity sold in British Columbia increased 12.6% over the previous year. Peak one-hour demand was up 17.8%.
- Therms of gas sold increased 8.0% over the previous year. A record one-day demand occurred in December 1972.
- The number of passengers carried by the urban transportation services continued to show improvement, increasing 5.6% over the previous year.
- Expenditures on new plant amounted to \$230,200,847 compared with \$217,884,088 for the previous year.
- Mica Dam, the third and final Columbia River Treaty storage project in British Columbia, was declared operational on 29 March 1973.
- The seventh and eighth generating units at Gordon M. Shrum Generating Station were placed in service.

B.C. HYDRO'S REVENUE DOLLAR

For the year ended 31 March 1973

WHERE THE REVENUE CAME FROM

ELECTRIC-RESIDENTIAL	27¢	
ELECTRIC-OTHER	43¢	
GAS	17¢	
PASSENGER TRANSPORTATION	7¢	
RAIL FREIGHT	3¢	
MISCELLANEOUS	3¢	

HOW THE REVENUE WAS USED

EMPLOYMENT COSTS	22¢	
MATERIALS AND SERVICES	16¢	
GRANTS, SCHOOL TAXES, ETC.	7¢	
INTEREST ON DEBT*	32¢	
DEPRECIATION	17¢	
RETAINED IN THE BUSINESS	6¢	

*less interest charged to construction.

ANNUAL REPORT OF BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

for the year ended 31 March 1973

RESULTS OF OPERATIONS

Net income for the year under review, after providing for all expenses, was \$21,192,058 compared with \$16,755,890 for the previous year. An amount of \$10,000,000 was appropriated from net income to establish a reserve for stabilization of rates; the balance of net income was added to earnings employed in the business. The reserve for stabilization of rates will be used to delay or minimize upward adjustments in electric and gas rates that might otherwise be necessary to cover short-term losses in operations.

Gross revenues for the year amounted to \$334,921,599, an increase of \$28,999,800 or 9.5% over the previous year.

The following table shows the principal sources of revenue and how this revenue was used in the operations of B.C. Hydro:

	Year Ended 31 March 1973	Year Ended 31 March 1972
Where the revenue came from:		
Sale of electricity to residential customers	\$ 90,615,407	\$ 84,926,714
Sale of electricity to other customers	144,411,820	126,498,675
Sale of gas	55,255,293	51,726,999
Transportation of urban and interurban passengers	25,065,651	24,147,419
Rail freight operations	10,786,652	10,219,984
Interest on temporary investments	5,460,647	4,839,994
Miscellaneous	3,326,129	3,562,014
	<u>\$334,921,599</u>	<u>\$305,921,799</u>
How the revenue was used:		
Salaries, wages and employee benefits	\$ 72,678,672	\$ 67,549,011
Materials and services	52,996,482	50,964,886
Grants, school taxes, etc.	22,186,345	20,013,289
Interest on debt, less interest on projects under construction	108,146,799	97,698,088
Depreciation of plant	57,721,243	52,940,635
Retained in the business	21,192,058	16,755,890
	<u>\$334,921,599</u>	<u>\$305,921,799</u>

To measure the results of operations for each financial period, B.C. Hydro follows the accounting principle of matching revenues and operating expenses in the financial period to which they relate. This matching includes accounting on an accrual basis and classifying expenditures as either operating expenses of the current financial year or expenditures on plant having a useful life extending over a number of years.

The following table shows net income (loss) by service; in determining net income for each service, judgment decisions are involved in the allocation of administrative, engineering and general expenses:

Service	Year Ended	Year Ended
	31 March 1973	31 March 1972
	Millions	
Electric	\$13.9	\$ 8.2
Gas	9.6	9.3
Urban transportation	(4.0)	(2.9)
Interurban transportation	(.9)	(.7)
Rail freight	2.5	2.6
Miscellaneous	.1	.3
	<u>\$21.2</u>	<u>\$16.8</u>

Net income for the electric service for the year ended 31 March 1972 was adversely affected by costs attributable to the severe storms in January 1972.



Award-winning outdoor lighting display, designed by B.C. Hydro staff for Empress Hotel, brightens Victoria's Inner Harbour.

ELECTRIC SERVICE

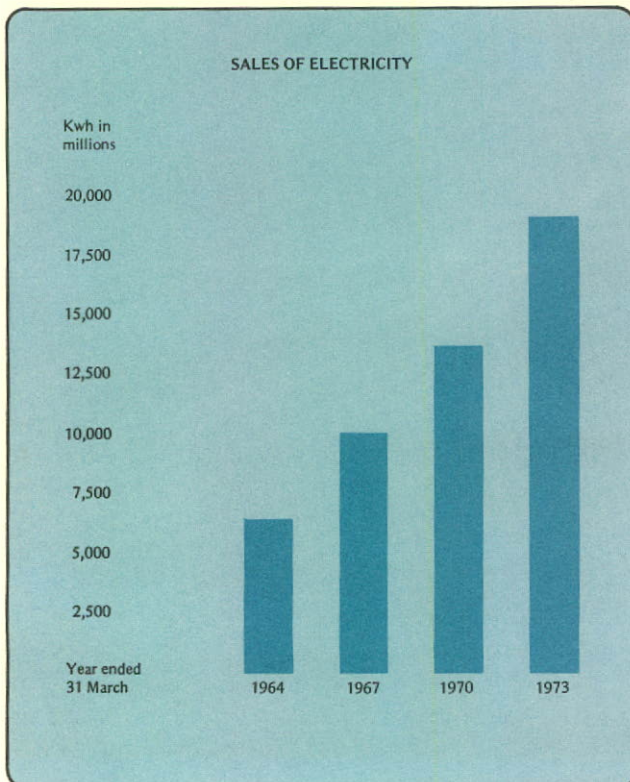
Sales of Electricity

The rate of growth in requirements for electricity continued at a high level during the year. Sales of kilowatt-hours of electricity in British Columbia by B.C. Hydro increased 12.6% over the previous year. Gross revenues from the electric service were \$235,027,227, up 11.2% from the previous year.

The following table shows an analysis of sales of electricity by B.C. Hydro for the year ended 31 March 1973:

Category	Kilowatt-hours Sold % of Total	Revenue % of Total	Average Revenue per Kilowatt-hour Cents
Residential	25.1	39.0	1.89
Commercial	19.9	32.1	1.96
Industrial	11.0	9.8	1.09
Bulk	37.0	16.7	.55
Other systems	1.2	.9	.94
Export of surplus	5.8	1.5	.31
	<u>100.0</u>	<u>100.0</u>	<u>1.21</u>

B.C. Hydro was serving 764,920 customers with electricity at 31 March 1973, an increase of 39,098 during the year. Average annual consumption per residential customer rose from 7,342 kwh to 7,365 kwh.

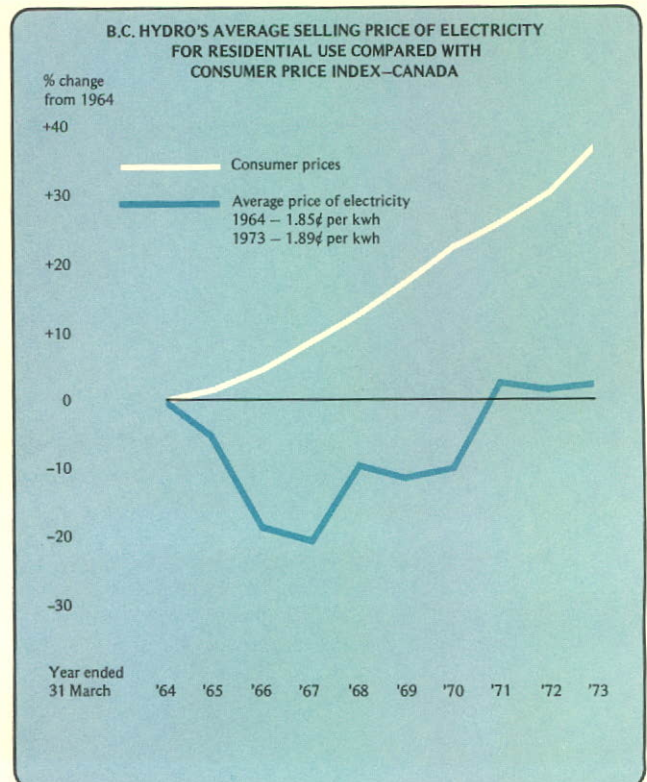


There were a number of interesting developments in the use of electricity in B.C. Hydro's service area. A new metal halide lamp is gaining acceptance for illuminating sports and recreational facilities. Greater use is also being made of high-pressure sodium lamps, particularly for street lighting. Both types are considerably more efficient than mercury-vapour lamps. Acceptance of the soft-start motor was a major step in providing better service to farmers in British Columbia who require increased power for greater efficiency. The soft-start motor is economical and practical for farmers and for B.C. Hydro, because the required service can be provided from single-phase distribution rather than higher cost three-phase.

Regional Development

British Columbia's economy continued buoyant throughout 1972, with increases recorded in consumer spending and in the manufacturing, mining, agriculture and fishing industries. The value of exports through ports in British Columbia rose to a record of more than \$3 billion, the principal increases being in shipments to United States and Japanese markets. The population of the Province rose an estimated 2.8% during the year compared with 1.2% for the rest of Canada.

The value of production in the mining industry increased for the fourteenth consecutive year. Electric extensions were completed during the year to many major projects, including a copper-molybdenum mine of Lornex Mining Corporation Ltd., in the Highland Valley; a copper mine of Similkameen Mining Company Limited, near Princeton;



a copper-molybdenum mine of Gibraltar Mines Ltd., near McLeese Lake; a copper mine of Noranda Mines Limited, at Babine Lake; and expansion of the copper mine of Granisle Copper Limited, also at Babine Lake.

Housing starts in Canada and the United States reached record highs during the year; as a consequence, there was an increase in demand for wood products from manufacturers in British Columbia. In the pulp and paper industry, new capacity was added by British Columbia Forest Products Limited, at Mackenzie; Cariboo Pulp & Paper Company, at Quesnel; and Weyerhaeuser Canada Ltd., at Kamloops. At Squamish, the new sodium chlorate plant of Squamish Chemicals Ltd. began operating in December 1972.

B.C. Hydro continued negotiations with the management of Canadian Pacific Limited on the feasibility of electrifying the main rail line from Field through to the West Coast.

In the Lower Mainland, a number of large commercial developments, including office buildings, hotels and shopping centres, were completed during the year, and others were under construction at the year-end. Electric circuits were completed to Royal Centre and Bentall Centre Tower III in Vancouver. Throughout British Columbia,

more than two hundred new electric services were connected to schools, churches, recreational facilities, hospitals and rest homes during the year.

In August 1972, B.C. Hydro acquired the electric distribution system serving 82 customers at Bamfield and extended service to 446 customers in Tahsis, formerly supplied by Tahsis Company Ltd. Other communities added to the system during the year included Cheslatta, Marilla, Priestly, Streatham, Tatalrose and Wistaria, all in the central interior of the Province.

Rural Electrification

During the year ended 31 March 1973, the Government of British Columbia made a grant of \$3,000,000 to B.C. Hydro to provide financial assistance for rural electrification. This grant enabled B.C. Hydro to extend financial help during the year to 209 projects serving 940 customers along 554 miles of distribution lines. Projects approved included extensions to serve 60 customers at Mahood Lake, east of 100 Mile House, and 46 customers at Wonowon, north of Fort St. John, and a community self-help undertaking to provide service to 70 customers at Chilanko Forks, west of Williams Lake.



New district headquarters at Campbell River accommodates general offices, line crews, vehicles and storage facilities.

Generation and Supply of Electricity

Demand for electricity during the year totalled 21,511 million kwh compared with 17,977 million kwh during the previous year. The following table shows requirements for energy and sources of supply for the year under review:

	Kwh in Millions	% of Total
Requirements for Energy:		
Sales to customers	17,991	83.6
Export of surplus	1,112	5.2
Line loss and system usage	2,408	11.2
	<u>21,511</u>	<u>100.0</u>
Sources of Supply:		
Hydro generation –		
Peace River Project	12,980	60.3
Other	6,895	32.1
Thermal generation	781	3.6
Purchases and miscellaneous	855	4.0
	<u>21,511</u>	<u>100.0</u>

As shown above, more than 90% of the electricity delivered during the year was from hydro plants, one of the most pollution-free sources of electric energy. Approximately 60% of the energy came from Gordon M. Shrum Generating Station on the Peace River, where the seventh and eighth

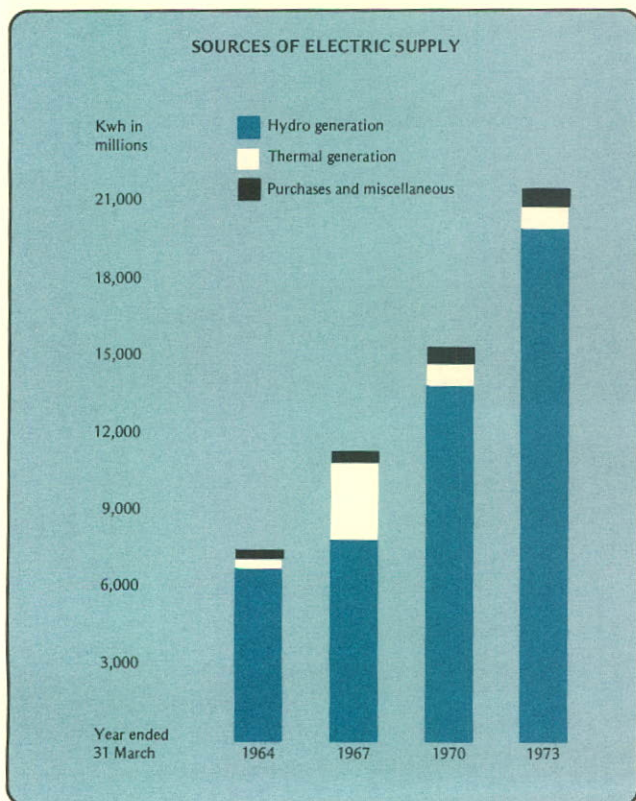
generating units of 227,000 kw each were placed in service in 1972. Because this station was able to supply all the additional energy required, the total power generated at other plants was approximately the same as during the previous year.

B.C. Hydro sold surplus power during the year to various utilities in the United States. These sales were made under an exchange agreement with Bonneville Power Administration, subject to a licence granted by the National Energy Board of Canada and to regular reporting by B.C. Hydro to the Energy Board. Revenues from sales of surplus power were in excess of the incremental costs of generating this power. Since the formation of B.C. Hydro, considerably more energy has been imported from the United States than has been exported.

Installed nameplate generating capacity at 31 March 1973 totalled 4,359,441 kw, up 13.2% from the previous year. The highest one-hour demand ever recorded on the integrated system, 3,499,000 kw, occurred on 6 December 1972. This represented an increase of 17.8% over the previous one-hour peak, which occurred in December 1971.

Security Deposits

A decision by the Supreme Court of British Columbia in December 1972 invalidated the policy of collecting security deposits from residential customers on a selective basis. In compliance with the ruling, all residential security deposits have been refunded by crediting customers' accounts.



Mobile diesel generating units supply power in some areas that are not connected to the integrated electric system.

GAS SERVICE

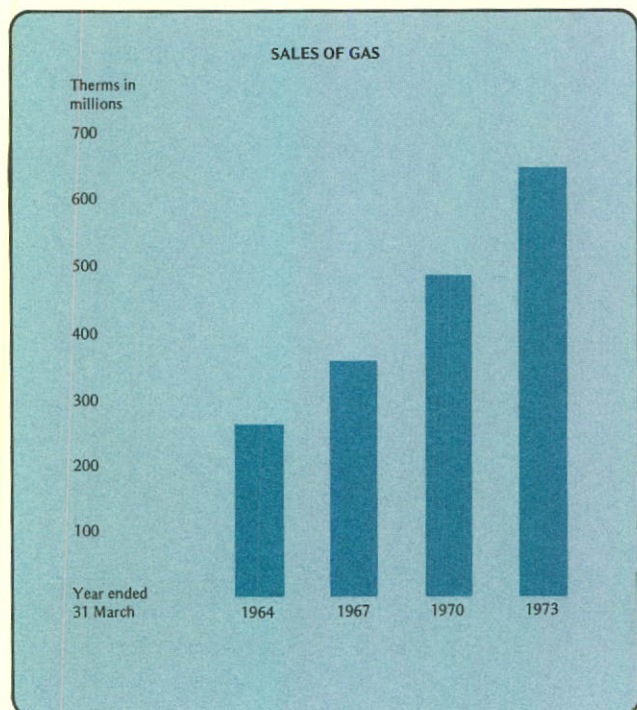
Gross revenues from the sale of gas were \$55,255,293, up 6.8% from the previous year, while therms of gas sold rose 8.0%. There was a brief cold spell in December 1972, but the weather during the year was generally milder than during the previous year.

The following table shows an analysis of sales of gas by B.C. Hydro for the year ended 31 March 1973:

Category	Therms Sold % of Total	Revenue % of Total	Average Revenue per Therm Cents
Residential	39.4	56.5	12.17
Commercial	31.2	31.0	8.45
Interruptible	29.4	12.5	3.63
	<u>100.0</u>	<u>100.0</u>	<u>8.50</u>

The peak one-day output of gas in the Lower Mainland during the year, excluding interruptible loads and gas delivered to Burrard Thermal Generating Plant, was 3.4 million therms on 7 December 1972, exceeding the previous peak of 3.1 million therms in January 1972.

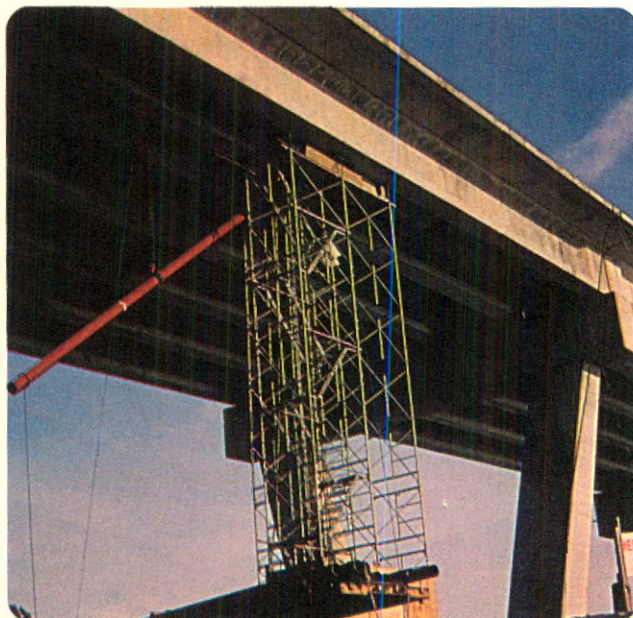
In the Lower Mainland, increases were recorded during the year in sales of gas for all categories of customers. Consumption by commercial customers increased substantially during the year, with natural gas chosen to heat 6,640 new apartment suites and many other new commercial buildings; in addition, heating units serving 2,804 existing apartment suites were converted to use this fuel. Gas heating was installed in 8,778 new houses during the year, and furnaces in 2,652 existing houses were converted to use natural gas. Gas heating is chosen for more than



90% of new residences in B.C. Hydro's natural gas service area, clearly indicating the acceptance of natural gas as a clean and economical fuel.

In its second year of operation, the liquefied natural gas plant on Tilbury Island in Delta was used to supply 5.6 million therms of gas in December and January. As a result, the demand for gas from Westcoast Transmission Company Limited was reduced during periods of peak load, thereby minimizing the cost of gas. B.C. Hydro purchases natural gas from Westcoast under a long-term, fixed-price agreement.

The net increase in gas mains in service during the year was 153 miles, bringing the total to 3,933 miles. There were 227,365 customers served with gas at 31 March 1973, an increase of 12,387 during the year.



Natural gas pipeline is extended across Mission Bridge.



Section of new line is placed in trench north of Matsqui.

TRANSPORTATION SERVICES

Urban Transportation

Gross revenues from urban transportation services amounted to \$17,517,515, up 3.8% from the previous year. In addition, the Government of British Columbia again made a grant of \$2,000,000 to B.C. Hydro to reduce losses on the urban transit services. Passengers carried totalled 76.7 million, an increase of 5.6% over the previous year. The upward trend in passenger riding, after a decline following the strike in 1971, continued during the year. To meet the increased patronage, several improvements in service were introduced, and 399,000 additional miles were operated during the year.

Effective 1 July 1972, senior citizens became entitled to receive courtesy cards from the Provincial Government, allowing them to ride at students' fares on the transit systems. Free transportation on all routes for three shopping days before Christmas and free Christmas lighting tours were also made available to senior citizens.

The park-and-ride express service introduced in March 1972, with the cooperation of the City of Vancouver and the Pacific National Exhibition, has been successful. This service operates between the Pacific National Exhibition parking lot and the downtown business area during rush-hour periods. By year-end, approximately 850 passengers from more than 500 private vehicles were using the service on weekdays, thus considerably relieving traffic congestion. In 1972, ten new diesel buses were added to the Mainland urban fleet, and five new diesel buses were purchased for the Greater Victoria system. In December, ninety-nine diesel buses were ordered from Canadian suppliers to improve the Lower Mainland bus service, including extension of routes to several areas at present without public transportation. Each new bus will be equipped with improved fuel injectors to reduce exhaust fumes.

An application was made to the Federal Government in June 1972 to support a research and development project for a system to monitor automatically the location of vehicles and to count passengers. In January 1973, the Transportation Development Agency of the Ministry of Transport approved grants to B.C. Hydro and a local manufacturer to design and develop a system for monitoring vehicles. The purpose of this research project is to provide central control of vehicles to assist in maintaining schedules.

Interurban Transportation (Pacific Stage Lines)

Gross revenues from interurban bus services rose 5.3% to \$5,548,136 during the year, and the number of passengers increased 3.0% from the previous year. Revenues from the services operated between Vancouver and Victoria and between Vancouver and Nanaimo (via ships of the British Columbia Ferry Authority) increased 5.3% during the year, and gains were also recorded in revenues from sightseeing, charter and escorted tour services. There was a modest

increase in passengers carried on the Greater Vancouver and Fraser Valley routes.



Pacific Stage Lines bus emerges from ferry at Swartz Bay.

Rail Freight

Gross revenues from rail freight operations amounted to \$10,786,652, an increase of 5.5% over the previous year, while volume of freight hauled was 2,674,274 tons, up 2.6%. These increases are particularly significant, because there was substantial growth in the previous year's business as a consequence of strikes by longshoremen at west coast ports in the United States. The increases primarily reflected greater activity in shipments of forest products, automobiles, household products and prepared foods.

Two new 2,000-horsepower, 190-ton diesel locomotives were placed in service in January 1973 to handle the increasing volume of business; B.C. Hydro now owns twenty diesel locomotives. Arrangements were made to lease a fleet of ten "all-door" rail cars to handle shipments of lumber to the United States; these cars have four doors on each side which open 25-foot sections, permitting fast and efficient mechanical loading and unloading.

On 1 April 1972, British Columbia Railway Company assumed general responsibility for managing B.C. Hydro's rail freight service. The primary purpose of this arrangement is to obtain the benefits of unified management in the development of Provincial railways.

COST OF PROVIDING SERVICES

The total cost of providing all services during the year was \$313,729,541, an increase of \$24,563,632 or 8.5% over the previous year.

Interest and other costs on debt charged to operations during the year were \$108,146,799, up \$10,448,711 or 10.7% over the previous year. The increase reflected:

- (a) The transfer to active service of new plant, including the seventh and eighth units at Gordon M. Shrum Generating Station and a proportion of the dam, powerhouse and other common property associated with the Peace River Project. Interest on money borrowed to pay for new plant becomes a charge against operations when plant is placed in service.
- (b) The impact of sharply increased costs of construction during recent years.
- (c) The higher rates of interest on money borrowed during recent years.

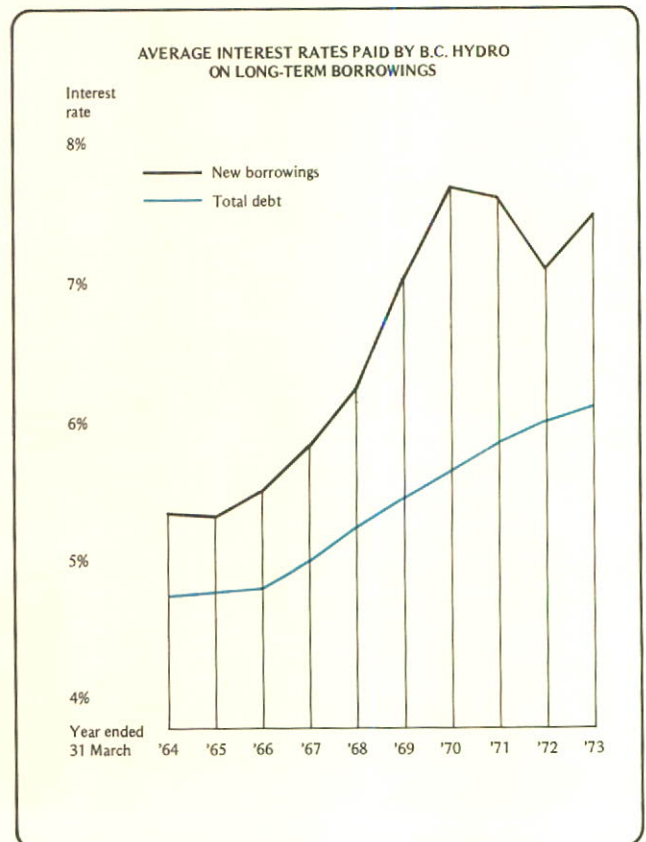
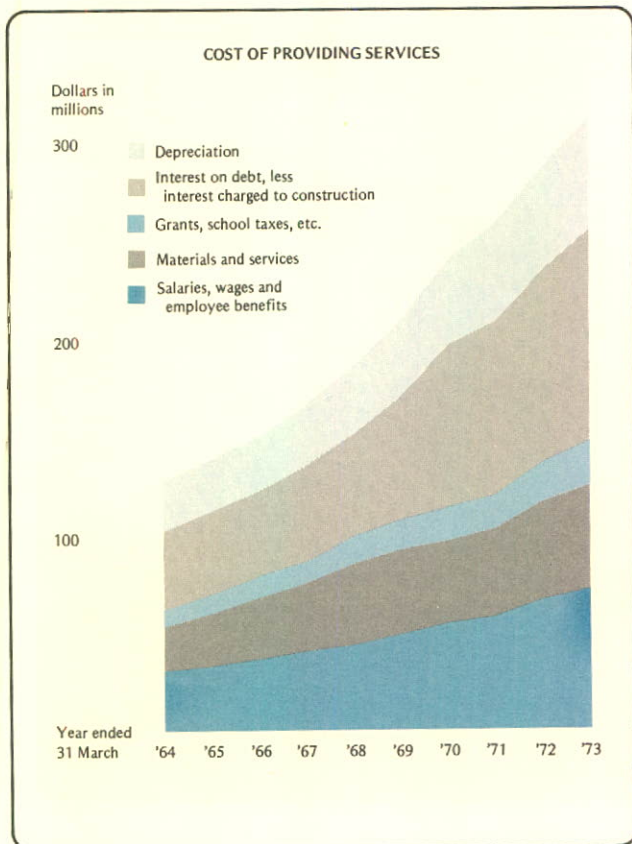
Provision for depreciation of plant was \$57,721,243 compared with \$52,940,635 for the previous year, an increase of 9.0%. Increases in depreciation expense are directly

related to the transfer to active service of new plant; consequently, higher costs of construction are now being reflected as a charge against operations. Depreciation of expenditures on plant is computed on the straight-line method at rates based on the estimated useful lives of properties; in this way, the cost of each property is charged in equal amounts against revenues for each financial period during the life of that property.

Grants, school taxes and water rentals charged to operating expenses totalled \$22,186,345, an increase of \$2,173,056 or 10.9% over the previous year. This increase was caused mainly by additions of property and generally higher assessments on property.

Salaries, wages and employee benefits charged to operations amounted to \$72,678,672, an increase of \$5,129,661 or 7.6% over the previous year. The increase was caused primarily by higher rates of pay and an increase in the number of regular employees, but the comparison is distorted by the impact on the previous year's costs of a supplement in pensions to superannuated employees.

Purchases of natural gas from Westcoast Transmission Company Limited totalled \$23,329,825, of which \$21,954,253 was for gas sold to the public — an increase of 7.1% over the previous year. The remainder of the gas purchased was used principally at Burrard Thermal Generating Plant.



FINANCING

The following 25-year sinking fund bonds were sold in Canada during the year ended 31 March 1973:

Issue	Principal Amount	Effective Rate
7.38% Series CR	\$10,000,000	7.38%
7.76% Series CT	25,000,000	7.76
7.76% Series CU	4,000,000	7.76
7.63% Series CV	5,000,000	7.63
7.63% Series CW	25,000,000	7.63
7.48% Series CX	25,000,000	7.48

In addition, sinking fund bonds totalling \$73,847,000 were sold to the Canada Pension Plan Investment Fund, at an average interest cost of 7.33%.

The average effective annual interest cost of all long-term bonds sold by B.C. Hydro during the year was 7.48% compared with an average of 7.09% for the previous year. On 15 August 1972, \$50,505,000 6% Parity Development Bonds Series CS, due 15 August 1977, were sold. The net proceeds of this issue were applied to the repayment of \$50,505,000 7% Parity Development Bonds Series AN, which matured 15 August 1972.

The proceeds of the \$25,000,000 Series CT bonds, sold in November 1972, were applied to the partial repayment of \$50,505,000 7% Parity Development Bonds Series AT, due 3 August 1973.

During the year, \$27,575,614 was paid to Trustees to meet sinking fund requirements of long-term debt. All sinking fund obligations have been met.

Bonds and other securities issued by B.C. Hydro and its predecessors are unconditionally guaranteed as to principal and interest by the Province of British Columbia.

Columbia River Treaty Funds

The following is a statement of Columbia River Treaty funds as at 31 March 1973:

Amount received from sale of Canada's entitlement to down- stream power benefits	\$273,291,661
Amounts received for flood control provided by Duncan, Arrow and Mica storage projects	69,333,966
Additional downstream power benefits received (net)	6,717,393
Interest from investments	47,643,075
Imputed interest charged to construction of storage projects . . .	82,121,428
	<u>479,107,523</u>
Expenditures on Columbia River Treaty storage projects, including interest charged to construction . . .	547,951,179
Balance provided by B.C. Hydro	<u>\$ 68,843,656</u>

B.C. Hydro's system control centre on Burnaby Mountain has received a First Honor Award for Utility Design, in competition with publicly owned utilities in North America. The award, which was the highest in the contest, was granted by the American Public Power Association.

The judges commented on the control centre as follows: "It ties in beautifully with the surrounding buildings and demonstrates a very sensitive handling of the landscape. Everything is done in a clean, sophisticated manner with imagination and good use of materials. It is consistent throughout — there are no weak points. The rhythm of the buildings ties into the existing structures."



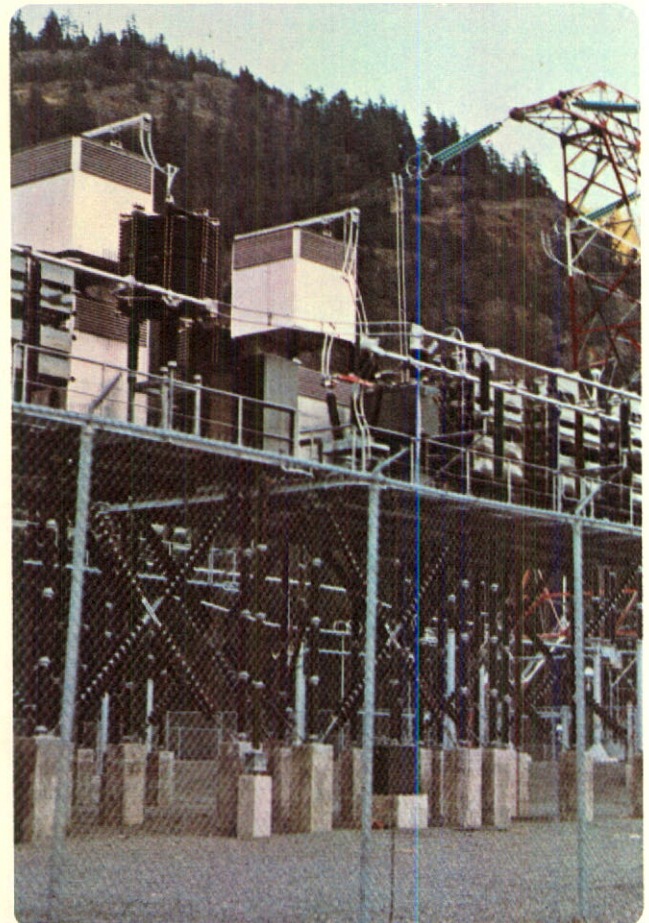
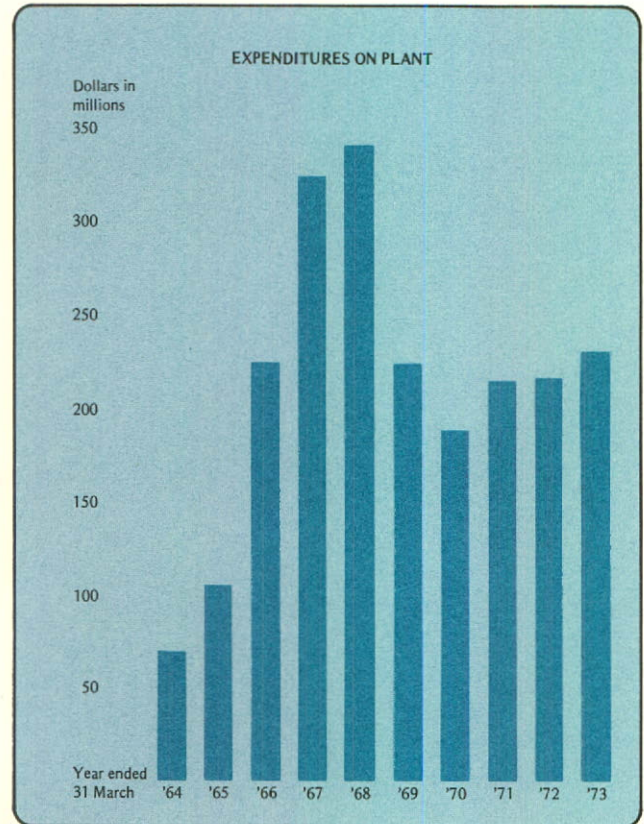
CONSTRUCTION PROGRAM

Expenditures on plant additions, land and improvements totalled \$230,200,847 compared with \$217,884,088 for the previous year. Net property additions were \$218,388,388 after deducting plant retirements of \$11,812,459. Expenditures on plant included an allocation of indirect costs for administration, engineering and supervision; and interest on plant under construction, at rates equivalent to the cost of borrowing funds.

Major expenditures for the year by projects or broad classifications included the following:

Peace River Project	\$19,165,831
Columbia River Treaty storage projects	48,127,536
Mica generating plant	21,096,246
Kootenay Canal project	23,329,518
Burrard Thermal Generating Plant	8,062,831
Rupert gas turbine generating plant	3,289,315
Whatshan redevelopment	2,645,598
Quatsino gas turbine generating plant	2,188,113
Major electric transmission lines —	
Mica to Ingledow and Meridian — 500 kv	11,159,361
Cranbrook to Natal to Alberta border — 230 kv	1,699,185
Cranbrook to Kimberley — 230 kv	1,056,646
Arnott to Kidd — 230 kv	1,019,894
Dawson Creek to Fort St. John — 138 kv	986,462
Smithers to Hazelton — 138 kv	965,034
Other	4,848,087
Substations, associated distribution facilities and local transmission systems	28,920,099
Electric extensions to serve new customers	33,613,972
Gas extensions to serve new customers	7,175,765
Gas system renewals and alterations	3,039,822
Vernon regional administration centre	1,362,705
Surrey service centre	1,260,215
Diesel locomotives for rail freight service	848,632
Buses for urban and interurban transit systems	818,024

Design engineering and construction inspection on most major construction projects are carried out by International Power and Engineering Consultants Limited, a wholly owned subsidiary of B.C. Hydro.



Chapmans series capacitor station will be completed in 1973.



Surplus water, stored in Williston Lake to regulate flow during 1972 flood season, later is released through spillway.

Peace River Project

The seventh and eighth generating units, each with a nameplate rating of 227,000 kw, were placed in service in the underground powerhouse at Gordon M. Shrum Generating Station in June and September 1972 respectively, bringing the capacity of this plant to 1,816,000 kw. Manufacture of the ninth generating unit, with a nameplate rating of 275,000 kw, progressed during the year; this unit is scheduled for operation in 1974. A tenth unit can be added later, as needed.

Series capacitor stations at Kennedy and McLeese were placed in service in 1972, and similar stations at Chapmans and Creekside will be completed in 1973. These stations, located along the two 500 kv transmission lines from Gordon M. Shrum Generating Station to Ingledow Substation, in the Lower Mainland, are designed to increase transmission capability of the lines to keep pace with the increased output of the Peace River plant.

Storage of water in Williston Lake and regulation of flow in the Peace River kept more than seven feet of Peace

River water from being added to record high levels of the Smoky River, thereby preventing a flood at the Town of Peace River, Alberta from becoming more serious. Because of the exceptionally high spring runoff, operation of the spillway was necessary after the 1972 flood season to discharge surplus water from Williston Lake. A volume of water equivalent to a depth of 18.5 feet at maximum storage level had to be spilled.

A lawsuit was initiated on 17 July 1967 by Northern Powerplant Builders against B.C. Hydro for additional remuneration, damages and declarations as to the contractor's rights with respect to the contract for construction of the underground powerhouse and associated works. After a nine-month adjournment because of the contractor's application to amend the pleadings, the trial of the lawsuit against B.C. Hydro resumed on 10 January 1972. Since then, the proceedings have been confined mainly to presentation of evidence by witnesses appearing on behalf of the contractor. The contractor's witnesses were still being heard at 31 March 1973.

Columbia River Treaty Storage Projects

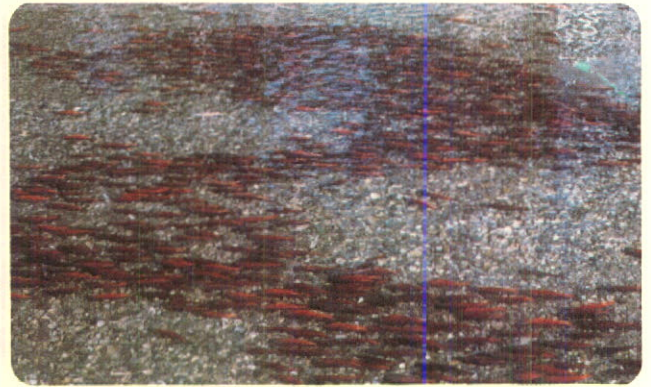
The Columbia River Treaty between Canada and the United States called for construction of three storage projects in Canada – Duncan, Arrow and Mica – to regulate river flow for both hydroelectric generation and flood control. Mica Dam was declared operational on 29 March 1973, marking completion of the final storage project in Canada as required by the Treaty. On that date, in accordance with terms of the Treaty, British Columbia received \$1.2 million in United States funds for flood control provided by the Mica project.

Mica Dam reaches a height of 800 feet above bedrock and has a crest length of 2,600 feet. The reservoir behind Mica Dam extends 135 miles, with one leg following the Big Bend of the Columbia River in a southerly direction and a second leg extending north along the Canoe River Valley. The reservoir has a live storage capacity of 12 million acre-feet.

The Duncan and Arrow storage projects were operated throughout the year in accordance with power and flood control operating plans prepared and implemented by the Canadian and United States Entities under provisions of the Columbia River Treaty.

The runoff conditions in the Columbia River Basin in 1972 were abnormal, and the accumulation of snow was one of the largest on record. Without the regulation of the Duncan and Arrow storage projects and the Libby project in the United States, the heavy snow, followed by a rapid

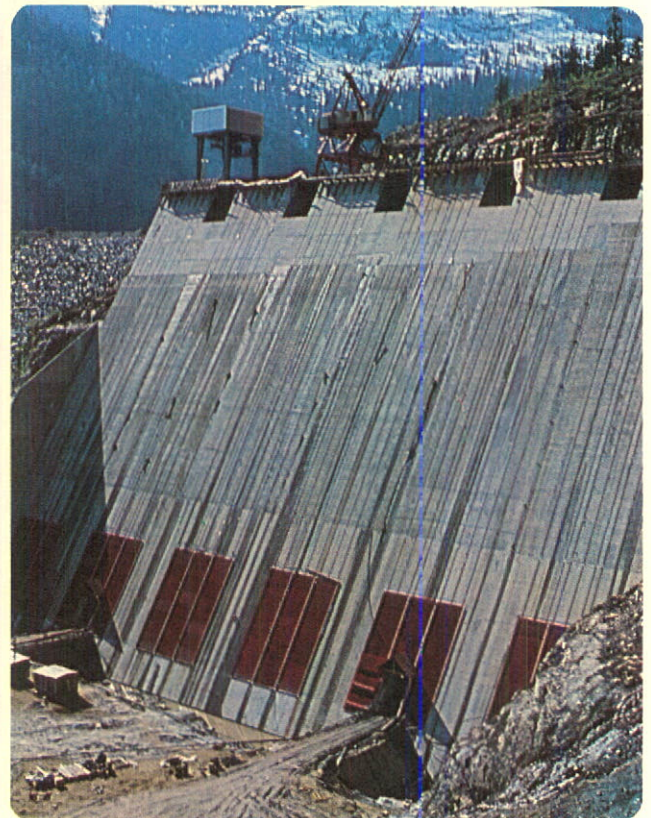
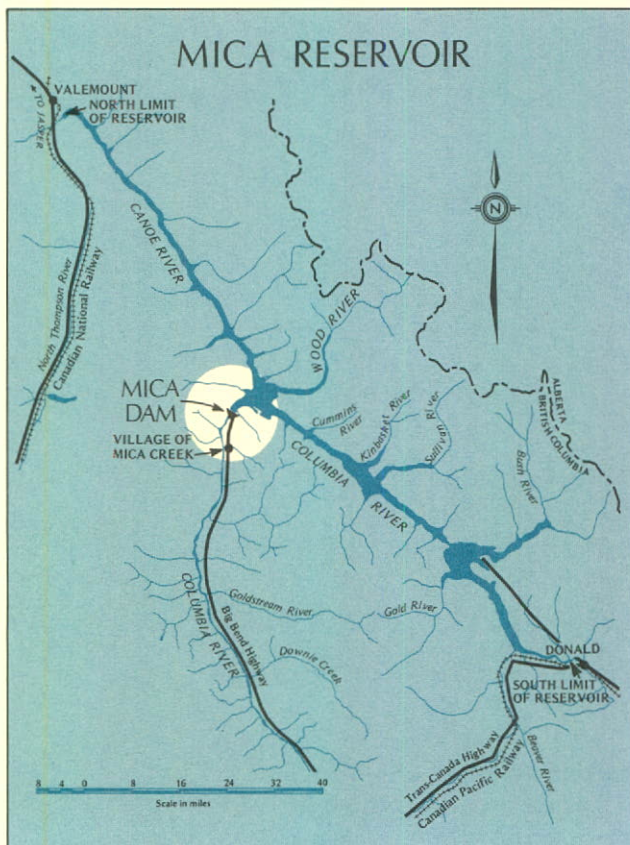
melt, would have resulted in the second largest runoff ever recorded. The operation of these upstream reservoirs prevented severe flood damage at Trail in June 1972.



Kokanee prepare to spawn in Meadow Creek channel.

In 1967, the Meadow Creek spawning channel, two miles west of Duncan Dam, went into operation. This channel was built by B.C. Hydro to compensate for kokanee spawning beds displaced by the Duncan storage project. For the second straight year, kokanee returning to the man-made channel have outnumbered their progenitors by nearly two to one.

Effective 27 October 1972, Mr. W.D. Kennedy, Manager, Canadian Entity Services, succeeded Mr. R.G. Williston – formerly Minister of Lands, Forests, and Water Resources – as Chairman of the Canadian Entity established by the Columbia River Treaty.



Intake structures will admit water to drive Mica turbines.

Other Major Electric Service Plant Additions

Redevelopment of Whatshan Generating Station in the southern interior of the Province was completed. The new station, with a capacity of 50,000 kw, was placed in service in December 1972.

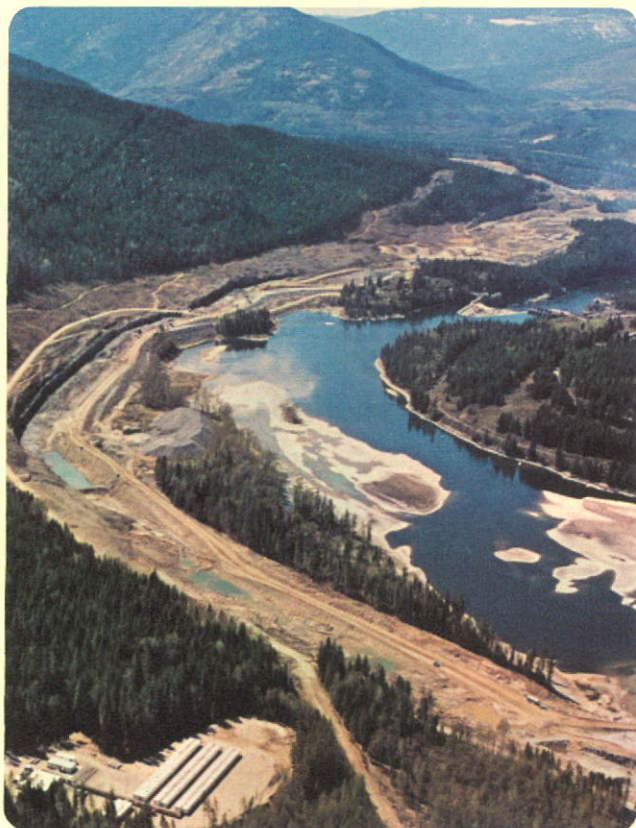
Construction of generating facilities at Mica moved into an active phase, with the building of a bridge to the right bank of the Columbia River, construction of associated roads, clearing of the switchyard area and excavation of powerhouse access and tailrace tunnels. Tenders were received in March 1973 for construction of the underground powerhouse for an ultimate six generating units – involving excavation of 1,000,000 cubic yards of rock and placement of 165,000 cubic yards of concrete. Manufacture of generators and turbines for the first four generating units, with a nameplate rating of 400,000 kw each, progressed during the year. The first two generating units at Mica are planned for service in 1976, and two more in 1977. Contracts were awarded for the supply of two travelling cranes, with a capacity of 310 tons each, and generator transformers, circuit breakers and gas-insulated bus systems for the first four units.

Clearing of rights-of-way for the two 500 kv transmission lines from Mica to the Lower Mainland was continued during the year, with nearly half the clearing completed

by the year-end. One line is scheduled to be completed in 1976, the other in 1977.

Good progress was made on the Kootenay Canal hydroelectric project. This development includes construction of a three-mile-long canal and an aboveground powerhouse, and installation of four 125,000 kw generating units. Main roads into the area and a 635-foot access bridge across the Kootenay River were completed in 1972. Manufacture of the generators and turbines was continued during the year. The first two generating units are scheduled for service in 1975, and the other two in 1976. Contracts were awarded for construction of the canal, construction of the powerhouse, supply and installation of canal headworks gates and supply of generator transformers. A unique aspect of the work is the stabilization of silt slopes in the powerhouse area by a process of electro-osmosis: an electric current is passed through the silt, causing excess water to migrate to electrodes where it is removed by a conventional dewatering system. Tenders were invited for clearing the first sections of rights-of-way for the 500 kv transmission line from the Kootenay Canal plant to a new substation at Ashton Creek, near Enderby.

At Burrard Thermal Generating Plant, a sixth 150,000 kw unit is scheduled for service in 1974, bringing the capacity of the Burrard plant to 900,000 kw. To provide increased peaking and standby capacity, two 28,600 kw gas turbine



Canal excavated at left will divert Kootenay River water.



Access bridge leads to construction site at Kootenay Canal.

generating units are being installed at Prince Rupert – one in 1973, and one in 1974; also, a 40,500 kw gas turbine generating unit is being installed in 1973 at Quatsino, near Port Hardy, and a second unit is scheduled for service there in 1975.

Nineteen areas served by B.C. Hydro are not connected to the integrated electric system, but are supplied by diesel-electric plants. Additional units were installed during the year to meet growing loads at Bamfield, Bella Coola, Port Clements, Revelstoke and Valemount.

In the Lower Mainland, construction was under way at the year-end on a second 500 kv transmission line between Ingledow Substation and the United States border (13 miles), to replace an existing 230 kv line. The completion of this line in 1973 will increase the capacity of the interconnection with Bonneville Power Administration, thereby improving security of supply. Construction was scheduled to start in 1973 on 230 kv lines between Arnott and Kidd Substations (9 miles) and from the Burrard plant to Murrin Substation (16 miles); these are essential links in the Lower Mainland transmission system.

In the southern interior of the Province, a 230 kv transmission line from Cranbrook to Natal (50 miles) was completed in 1972. This line will be extended to the Alberta border in 1974, where it will connect with the transmission system of Calgary Power Ltd. A 230 kv line, which will be operated initially at 60 kv, was constructed from Cranbrook to Kimberley (24 miles).

In the central interior, a 138 kv transmission line was completed between Smithers and Hazelton (43 miles), to connect Hazelton to the integrated electric system. The 138 kv line from Dawson Creek to Fort St. John (41 miles) was finished, completing the 138 kv loop joining Gordon M. Shrum Generating Station, Chetwynd, Dawson Creek and Fort St. John, thereby improving security of supply to these centres.

On Vancouver Island, the 138 kv transmission line from Gold River to Tahsis (35 miles) was completed in 1972, connecting Tahsis to the integrated system.

During the year, preliminary engineering and feasibility studies were carried out on potential power projects and associated transmission facilities. Included were sites at Downie and Revelstoke on the Columbia River below Mica, a site at Seven Mile Rapids on the Pend-d'Oreille River, three sites on the Peace River between W.A.C. Bennett Dam and the Alberta border and consideration of a diversion of the McGregor River into the Peace River Basin. Studies of projects on Vancouver Island included enlarging existing plants on the Campbell River, developing a site on the Kokish River, installing a thermal plant and increasing capacity of the interconnection between the Mainland and Vancouver Island. A decision was made to proceed with expansion of the high-voltage, direct-current interconnection from the Mainland.

Construction was continued during the year on a new



Helicopter takes towers for Cranbrook-Natal power line . . .

administration centre in Vernon, with completion planned for May 1973. The new facilities will provide space for engineering, construction, production, distribution and administrative staff.

Several maintenance and service facilities on the Lower Mainland will be consolidated at a service centre being developed in the Municipality of Surrey. A building for line crews was constructed in 1972, and construction started on a new, larger shop capable of handling repairs to major electrical equipment. Additional facilities planned for this location include a central warehouse, a testing laboratory and a vehicle repair shop.



... to right-of-way where workmen secure them into place.

Major Contracts

Major contracts awarded during the year included:

	Dollars in Thousands
Kootenay Powerplant Contractors (Atkinson-Harney Corporation, Commonwealth Construction Company Limited) Construction of powerhouse, Kootenay Canal project	38,978

Dillingham Corporation Canada Ltd. Construction of canal, Kootenay Canal project	32,648
British Columbia Forest Service Clearing Williston Lake Reservoir	5,000
Pentagon Construction (1969) Co. Ltd. Construction of civil, mechanical and electrical work, unit 9, Peace River Project	4,460
I-T-E Circuit Breaker (Canada) Limited Supply and installation of 500 kv compressed gas-insulated bus systems, Mica generating plant	4,425
FPE-Pioneer Electric Limited Supply of 500 kv generator transformers, Mica generating plant	4,408
Mica Dam Contractors Construction of labour camp at Mica Creek	2,900
Frank Stanzl Construction Ltd. Construction of electric shop, Surrey service centre	2,825
Costruzioni Metalliche Finsider Società per Azioni Supply of steel towers, Mica 500 kv transmission line	2,769
Flyer Industries Limited Supply of 60 buses	2,579
Canada Wire and Cable Limited Supply and installation of 230 kv underground circuit from Murrin Substation to Horne-Payne Substation	2,357
Westinghouse Canada Limited Supply of power transformers for substations (three contracts)	2,155
Fair Bros. Welding Ltd. Construction of underground gas mains and services, metropolitan Vancouver, for two years (two contracts)	2,098
General Motors of Canada Limited Supply of 39 buses	1,820
Heede International Ltd. Supply and installation of canal headworks gates and guides, Kootenay Canal project	1,487
Brown Boveri (Canada) Limited Supply of generator circuit breakers, Mica generating plant	1,451
Chinook Construction & Engineering Ltd. Clearing section of right-of-way for Mica 500 kv transmission lines	1,117

ENVIRONMENT

The development, distribution and utilization of all forms of energy are prime causes of today's concern about environmental pollution. On the one hand, there is an ever-increasing demand for energy, while on the other hand, there is a growing public awareness of the need to preserve the natural environment and to recognize human values. Society thus has a responsibility not only to consider how energy can be used more efficiently, but also how damage to the environment can be kept to a minimum.

The principal factors contributing to growth in use of energy are the increasing population and a rising standard of living. There are two inescapable conclusions: the world's supply of many forms of energy is being used up rapidly; and the cost of antipollution measures will cause a sharp increase in the price of energy. It seems inevitable that there will be a gradual transition to electricity as the preferred form of energy. Electricity is clean at the point of consumption, where pollution is usually most acute. In addition, electricity will assist in reducing pollution to a greater extent in the future by providing power for recycling wastes, for treating sewage and garbage, for driving trains, buses and other vehicles and for purifying air and water.

In many areas, there is public concern about the environmental effects of generation, transmission and distribution of electricity. The people of British Columbia are fortunate, because generation of electricity here is mainly from hydroelectric developments, one of the most pollution-free sources of energy. As requirements for electricity in this Province continue to grow, B.C. Hydro will earnestly seek to preserve the natural environment. Numerous members



B.C. Hydro's natural gas-fuelled van reduces air pollution.

of B.C. Hydro's staff are already involved in protection of the environment as part of their regular duties; in addition, consultants have been retained to advise on the environmental impact of new electric generating plants and transmission lines.

At the new Kootenay Canal hydroelectric project, B.C. Hydro has worked closely with the Fish and Wildlife Branch of the Provincial Department of Recreation and Conservation. Provision is being made for ramps to allow deer and other animals to climb out of the canal. Archaeological sites downstream from the area where the powerhouse will be constructed have been fenced for protection. Sites disturbed by construction are to be rehabilitated when the project is finished.

Because of British Columbia's large area and the distance between sources of electric energy and major distribution centres, the transmission grid is being constructed to operate at 500 kv. Such high-voltage transmission lines must be well clear of the ground and any obstructions, and the lines must be on safe and permanent structures — generally steel-fabricated towers of various designs. B.C. Hydro's current practice, where feasible, is to construct transmission lines remote from travelled or inhabited areas and to blend them into the landscape as much as possible. Rights-of-way are used for purposes such as agriculture, Christmas tree farms, parks and recreations such as golfing, horseback riding, skiing and bicycling. In the central interior, some 9,000 acres of rights-of-way seeded with grass provide valuable grazing for deer and other wildlife.

Plans have been made to landscape and screen many of the major substations in urban areas. New substations are designed to be compatible with the surroundings in which they are located and to comply with present and proposed



Exhaust gases at Port Mann plant are checked for pollutants.

noise standards. At existing substations, noise suppression equipment is being installed on a priority basis to meet the new criteria.

B.C. Hydro, together with 56 other utilities, is participating in a program of publicizing and encouraging the development of electric vehicles. As part of the program, a battery-operated, electric-powered service vehicle will be purchased to study the capabilities of electric vehicles and the impact of their widespread use on the system load factor. In addition, B.C. Hydro has ordered two electric passenger vehicles that will be used for similar studies. B.C. Hydro already has an experimental program under way using two vehicles powered by liquefied natural gas, which because of its clean-burning characteristics, causes little pollution.

B.C. Hydro has provided land and financial support for development of public recreational facilities. On the Arrow reservoir, three lakeshore parks – totalling some 600 acres and including three miles of waterfront – were opened to the public in the summer of 1972 on land given by B.C. Hydro to the Provincial Department of Recreation and Conservation. B.C. Hydro is cooperating with the Provincial Department of Lands, Forests, and Water Resources in clearing the Mica reservoir and in clearing and disposing of debris from Williston Lake. Work is under way, in cooperation with Provincial Departments, clearing stumps and snags from the Jordan River and Stave Lake reservoirs.

The challenge for B.C. Hydro and the people of British Columbia is to develop the electric power needed and, at the same time, preserve the magnificent environment of the Province and maintain its attractiveness and value for future generations.



Cloverdale street has new look after relocation of poles.

BOARD OF DIRECTORS

An Order-in-Council, approved by the Lieutenant-Governor on 11 October 1972, rescinded the previous appointments to the Board of Directors of B.C. Hydro with the exception of Dr. Gordon M. Shrum and Mr. John H. Steede, and appointed the Honourable Robert A. Williams and the Honourable James G. Lorimer as Directors.

On 1 November 1972, Mr. Williams announced the appointment of Mr. David Cass-Beggs, then Chairman of Manitoba Hydro-Electric Board, to succeed Dr. Shrum upon his retirement as Chairman of B.C. Hydro at the end of December 1972. Mr. Cass-Beggs joined the Board of Directors on 15 December 1972 and became Chairman effective 1 January 1973. Mr. Williams also announced the appointment of Mr. James W. Wilson to the Board of Directors effective 1 January 1973, with provision for him to assume full-time responsibilities on 1 May 1973. These appointments were authorized by an Order-in-Council approved by the Lieutenant-Governor on 1 November 1972.

EMPLOYEES

B.C. Hydro had a staff of 7,474 regular employees at 31 March 1973, an increase of 301 or 4.2% since 31 March 1972.

A new collective labour agreement, providing for wage increases, a shorter workweek and improved working conditions, was negotiated with the Amalgamated Transit Union. The settlement was for 30 months from 1 February 1973 to 31 July 1975, with increases in wages of 8% for the first year, 8% noncumulative for the second year and a general increase of 29 cents an hour for the remaining six months; in addition, wage differentials to certain skilled categories apply in the first year. General salary increases of 7% were granted supervisory, professional and confidential employees effective 1 December 1972.

Important changes in the British Columbia Hydro and Power Authority Pension Plan were approved by the Board of Directors and authorized by Order-in-Council, effective 1 June 1972. The period used for determining employees' earnings in the pension formula was reduced from an average of the best ten consecutive years to an average of the best seven consecutive years; the ceiling of \$15,000 on employees' annual earnings for contributions and calculation of pensions was eliminated; and pensions were introduced for widows and disabled dependent widowers under certain circumstances.

Continuing attention is given to developing managerial, supervisory and technical skills of employees through programs designed to meet specific needs of employees and B.C. Hydro. Some programs are conducted within the organization, and in other cases, employees attend courses at universities and other educational institutions.

A total of 173 employees retired on pension during the year, including Hugh A. Elliott, Coordinator of Adminis-

tration since October 1969, who retired on 31 August 1972 after a 37-year career with B.C. Hydro and its predecessor, British Columbia Electric Company Limited. Other members of senior management retiring during the year included: Henry C. Givins, Transportation Maintenance Manager – 38 years' service; Thomas A. Ross, Manager, Pacific Stage Lines Operations – 37 years' service; Herbert E. Sladen, Senior Distribution Engineer – 31 years' service; and Donald J. Martin, Manager, Railway Operations – 26 years' service.

Twenty-four employees who retired had service of 40 years or more; of these, the following had served for more than 45 years:

RICHARD MACKIE LONGMUIR, *Meter Reading Supervisor – 48 years, 8 months*

JOHN MacALPINE MANNING, *Transit Training Instructor – 48 years, 5 months*

WILLIAM RALPH FREETHY, *Senior Residential Sales Representative – 47 years, 11 months*

SAMUEL WILSON DUTHIE, *Mechanical Foreman – 46 years, 11 months*

WILLIAM THOMAS WALLACE, *Pay Distribution Clerk – 46 years, 3 months*

HERBERT HENRY BARBER, *Transit Supervisor – 46 years, 2 months*

CHARLES SIDNEY PITT, *Line Supervisor – 46 years*

DONALD ALBERT LEATHERDALE, *Transit Control Supervisor – 45 years, 6 months*

WALTER ERNEST BEEK, *Commercial Industrial Sales Representative – 45 years, 4 months*

WILLIAM JOSEPH ROBINSON, *Transit Operator – 45 years, 2 months*

JAMES JOSEPH MIDDLETON, *Agent, Marpole – 45 years, 1 month*



R.M. LONGMUIR



J.M. MANNING



W.R. FREETHY

FINANCIAL STATEMENTS

The financial statements of B.C. Hydro have been examined by Price Waterhouse & Co., the Auditors appointed by the Lieutenant-Governor in Council. The Report of the Audi-

tors, Statement of Income and Earnings Employed in the Business, Balance Sheet and Statement of Source and Application of Funds are included in the following pages.

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 1973 and the statements of income and earnings employed in the business and source and application of funds for the year then ended. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence 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 1973 and the results of its operations and the source and application of its funds 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
18 May 1973

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 1973

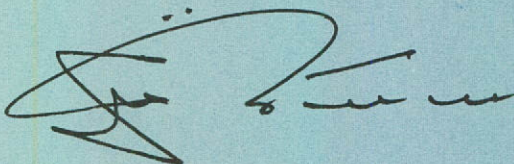
	1973		1972	
Gross revenues		<u>\$334,921,599</u>		<u>\$305,921,799</u>
Expenses:				
Salaries, wages and employee benefits		72,678,672		67,549,011
Materials and services		52,996,482		50,964,886
Grants, school taxes, etc.		22,186,345		20,013,289
Provision for depreciation (Note 7)		57,721,243		52,940,635
Interest on debt (Note 10)	\$123,706,008		\$115,896,536	
Less—				
Interest charged to construction	<u>15,559,209</u>	<u>108,146,799</u>	<u>18,198,448</u>	<u>97,698,088</u>
		<u>313,729,541</u>		<u>289,165,909</u>
Net income		21,192,058		16,755,890
Transferred to reserve for stabilization of rates (Note 9)		<u>10,000,000</u>		<u>—</u>
Balance of net income transferred to earnings employed in the business		11,192,058		16,755,890
Earnings employed in the business —				
At beginning of year		<u>118,054,041</u>		<u>101,298,151</u>
At end of year		<u>\$129,246,099</u>		<u>\$118,054,041</u>

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

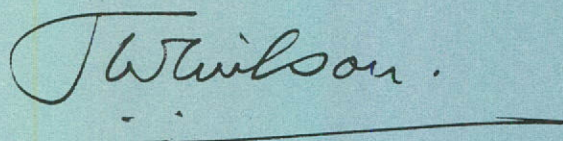
BALANCE SHEET AS AT 31 MARCH 1973

	1973	1972
PROPERTY ACCOUNT:		
Lands, franchises, water rights, storage dams, plants for the generation, transmission and distribution of electricity and gas, trolley coaches, motor buses, freight railway and rolling stock, etc., at cost	\$2,887,166,966	\$2,423,853,648
Less—		
Accumulated depreciation (Note 7)	511,922,856	463,532,358
	<u>2,375,244,110</u>	<u>1,960,321,290</u>
Deferred costs of dams, powerhouse and other common property (Notes 1 and 2)	157,269,768	166,687,947
Unfinished construction	129,830,483	365,337,234
	<u>2,662,344,361</u>	<u>2,492,346,471</u>
CURRENT AND WORKING ASSETS:		
Cash	867,066	2,398,309
Temporary investments (Note 3)	110,230,026	100,371,966
Accounts receivable and unbilled revenues	49,049,617	46,893,440
Materials and supplies, at cost	15,629,406	15,528,885
Prepaid expenses	682,560	690,331
	<u>176,458,675</u>	<u>165,882,931</u>
MORTGAGES AND OTHER DEFERRED ACCOUNTS RECEIVABLE	<u>3,917,692</u>	<u>4,937,960</u>
INSURANCE FUND	<u>2,460,811</u>	<u>1,670,292</u>
UNAMORTIZED DISCOUNT AND EXPENSE ON DEBT	18,097,701	19,248,906
	<u>\$2,863,279,240</u>	<u>\$2,684,086,560</u>

APPROVED ON BEHALF OF THE BOARD:



J.H. STEEDE, Director



J.W. WILSON, Director

	1973	1972
LONG-TERM DEBT (Notes 4 and 5)	<u>\$1,862,352,706</u>	<u>\$1,726,446,571</u>
PARITY DEVELOPMENT BONDS, payable on demand (Notes 5 and 10):		
7% Series AN due 15 August 1972	—	50,505,000
7% Series AT due 3 August 1973	25,505,000	50,505,000
7% Series AZ due 1 September 1974	50,505,000	50,505,000
7% Series CG due 1 September 1975	50,505,000	50,505,000
6% Series CS due 15 August 1977	50,505,000	—
	<u>177,020,000</u>	<u>202,020,000</u>
CURRENT AND ACCRUED LIABILITIES:		
Accounts payable	80,641,647	64,637,997
Interest accrued on debt	36,776,552	34,324,153
Sinking fund instalments due within one year	22,438,469	19,640,159
	<u>139,856,668</u>	<u>118,602,309</u>
DEFERRED LIABILITIES	<u>19,084,058</u>	<u>19,602,854</u>
RESERVE FOR INSURANCE (Note 6)	<u>2,460,811</u>	<u>1,670,292</u>
CONTRIBUTIONS ARISING FROM COLUMBIA RIVER TREATY (Note 1) ..	<u>479,107,523</u>	<u>462,104,986</u>
CONTRIBUTIONS IN AID OF CONSTRUCTION (Note 8)	<u>44,151,375</u>	<u>35,585,507</u>
RESERVE FOR STABILIZATION OF RATES (Note 9)	<u>10,000,000</u>	<u>—</u>
EARNINGS EMPLOYED IN THE BUSINESS	129,246,099	118,054,041
COMMITMENTS (Note 12)		
	<u>\$2,863,279,240</u>	<u>\$2,684,086,560</u>

The accompanying notes are an integral part of the above balance sheet.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

STATEMENT OF SOURCE AND APPLICATION OF FUNDS
FOR THE YEAR ENDED 31 MARCH 1973

	1973	1972
Funds provided:		
Operations—		
Net income	\$ 21,192,058	\$ 16,755,890
Provision for depreciation	57,721,243	52,940,635
Other	199,016	162,067
	<u>79,112,317</u>	<u>69,858,592</u>
Contributions in aid of construction	10,024,056	8,759,013
Proceeds from sales of bonds	217,737,725	166,182,000
Columbia River Treaty—		
Benefits received during year (net)	861,887	237,946
Interest	16,140,650	15,134,338
Miscellaneous	1,524,521	4,968,818
Decrease (increase) in working capital exclusive of changes in current portion of long-term debt	7,880,305	(23,284,933)
	<u>\$333,281,461</u>	<u>\$241,855,774</u>
Funds expended:		
Plant additions—		
Peace River Project	\$ 19,165,831	\$ 34,309,293
Columbia River Treaty storage projects	48,127,536	61,148,375
Other	162,907,480	122,426,420
	<u>230,200,847</u>	<u>217,884,088</u>
Sinking funds	27,575,614	23,971,686
Bonds redeemed	75,505,000	—
	<u>\$333,281,461</u>	<u>\$241,855,774</u>

NOTES TO FINANCIAL STATEMENTS AS AT 31 MARCH 1973

Note 1 – Columbia River Treaty Storage Projects:

Under the terms of the Columbia River Treaty between Canada and the United States, B.C. Hydro, as the Canadian Entity under the Treaty, has constructed three storage projects in British Columbia on the Columbia River – Duncan, Arrow and Mica.

B.C. Hydro received Canada's entitlement to half the increased generation of power in the United States, resulting from the construction of the three storage projects, which was sold to Columbia Storage Power Exchange for periods of 30 years from the scheduled dates of completion of the respective projects. B.C. Hydro also received payments for providing flood control as each of the storage dams became operational. These various payments and benefits, with interest, aggregated \$479,107,523 as at 31 March 1973.

On 29 March 1973, Mica Dam, the third and final storage project built under the terms of the Treaty, was declared operational. At 31 March 1973, construction costs of the three storage projects aggregated \$547,951,179, and the difference between these construction costs and the contributions arising from the Columbia River Treaty was \$68,843,656. This sum, considered to relate to the future generation of power on the Columbia River in British Columbia, has been classified as deferred costs under property account and will continue to attract interest until the Mica generating plant becomes operational.

Note 2 – Deferred costs, Peace River Project:

Consistent with the accounting practice adopted in 1968, the construction costs of the dam, powerhouse and other common property are being transferred to plant in service by instalments proportionate to the number of completed and operational generating units in relation to the ten units presently contemplated. The transfers are to be completed not later than 31 March 1976. By 31 March 1973, eight generating units were in service and consequently 80% of the costs of the dam, powerhouse and other common property had been transferred to plant in service.

The costs of the dam, powerhouse and other common property of the Peace River Project, not yet transferred to plant in service and included in deferred costs under property account, amounted to \$88,426,112 at 31 March 1973. These costs continue to attract interest charged to construction.

Note 3 – Temporary investments:

Short-term deposits and investment receipts—	
Banks	\$ 61,497,000
Other financial institutions	46,290,000
British Columbia Hydro and Power Authority parity development bonds.	89,700
Bonds and debentures held for sinking fund requirements.	2,353,326
	<u>\$110,230,026</u>

The above investments are carried at cost, which is not in excess of market value.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

NOTES TO FINANCIAL STATEMENTS AS AT 31 MARCH 1973 (continued)

Note 4 — Long-term debt:

First mortgage bonds, after deducting bonds redeemed in accordance with sinking fund requirements:

3½% due to 1975	\$ 11,550,000
3¾% to 4¾% due 1976 to 1980	42,801,000
4¼% to 5% due 1981 to 1985	49,194,000
5½% to 6½% due 1986 to 1990	83,578,000
4% to 5¾% due 1991	14,416,000

Callable bonds:

4% to 5½% due 1986	102,924,100
4% to 5½% perpetual	1,489,300

Other bonds:

3¼% due to 1975	10,000,000
3% to 3½% due 1976 to 1980	37,023,000
5% to 5¼% due 1981 to 1985	37,645,300
3¼% to 7.32% due 1986 to 1990	325,955,000
3¾% to 8% due 1991 to 1995	1,015,202,000
6.90% to 7.76% due 1996 to 1998	181,000,000

Sinking fund debentures, after deducting debentures redeemed in accordance with sinking fund requirements:

5¾% due 1977	34,000,000
------------------------	------------

Other debentures:

3¾% to 4¾% due 1986 to 1988	65,000,000
	<u>2,011,777,700</u>

Exchange premium at date of issue on long-term debt payable in United States funds

(principal \$251,314,000 U.S.)	8,972,540
	<u>2,020,750,240</u>

Less—

Sinking funds on deposit with Trustee, Minister of Finance for the Province of British Columbia	135,959,065
	<u>\$1,884,791,175</u>

Classification on balance sheet:

Long-term debt	\$1,862,352,706
Sinking fund instalments due within one year, included in current and accrued liabilities	22,438,469
	<u>\$1,884,791,175</u>

Long-term debt and sinking fund requirements for the years ending 31 March 1975 to 1978 are \$33,500,000, \$27,000,000, \$33,500,000 and \$61,000,000 respectively.

Note 5 — Guarantee by Province of British Columbia:

The Government of the Province of British Columbia has unconditionally guaranteed the principal and interest of the long-term debt and parity development bonds.

Note 6 – Reserve for insurance:

In 1969, B.C. Hydro adopted a policy of self-insurance on plant and equipment and for general liability. An insurance reserve is being accumulated by annual charges to operations commensurate with the current cost of insurance.

Fire insurance coverage has been retained with insurance companies on certain plant and equipment to comply with trust deed requirements. Insurance coverage is also maintained on major projects under construction.

Note 7 – Depreciation:

The depreciation policy of B.C. Hydro is to allocate the original cost of plant to operations at uniform rates over the estimated service lives of the assets. Depreciation is provided during the year on all depreciable assets in service at the beginning of each year and is computed on the straight-line method.

Note 8 – Contributions in aid of construction:

Contributions in aid of construction include grants for rural electrification from the Government of the Province of British Columbia and amounts paid by customers towards construction of plant. The cost of such plant is included in property account, and the contributions in aid of construction are amortized over the estimated service lives of the related assets.

Note 9 – Reserve for stabilization of rates:

In the year ended 31 March 1973, \$10,000,000 has been appropriated to establish a reserve for stabilization of rates. This reserve will be used to delay or minimize upward adjustments in electric and gas rates that might otherwise be necessary to cover short-term losses in operations.

Note 10 – Interest on debt:

Gross interest	\$129,339,907
Amortization of discount and expense	<u>1,765,957</u>
	131,105,864
Less—	
Income from sinking fund investments	<u>7,399,856</u>
	<u>\$123,706,008</u>

The interest rate on Series AN, AT and AZ Parity Development Bonds was increased from 6½% to 7% effective September 1970. B.C. Hydro charges interest to plant under construction, at rates equivalent to the cost of borrowing funds.

Note 11 – Pension plans:

Employees of B.C. Hydro are covered under contributory pension plans, and provisions are being made for current services according to the requirements of the various plans. Provision has been made for all past service costs under these plans with the exception of those relating to a contributory plan introduced effective 1 January 1965. B.C. Hydro is funding the estimated past service costs of this plan by annual payments of \$393,800 over a fifteen-year period which commenced 1 April 1967.

Note 12 – Commitments:

Purchase commitments and contracts of B.C. Hydro for capital projects aggregated approximately \$205,000,000 as at 31 March 1973.

FINANCIAL STATISTICS
(in millions of dollars)

YEAR ENDED 31 MARCH	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
SOURCES OF REVENUE										
Electric—residential	90.6	84.9	78.3	60.7	57.7	51.5	41.6	38.1	40.6	38.5
—other	144.4	126.5	114.7	102.1	91.7	86.2	76.8	66.8	60.4	54.8
Gas	55.2	51.7	47.5	41.0	40.6	34.4	32.1	31.2	30.0	25.7
Passenger transportation	25.1*	24.2*	21.3*	20.7*	19.5*	18.1	17.6	16.9	14.5	13.8
Rail freight	10.8	10.2	8.0	8.4	7.4	7.0	6.4	6.2	5.9	5.6
Miscellaneous	8.8	8.4	7.1	7.0	4.2	4.3	3.6	1.6	1.9	1.2
Total	334.9	305.9	276.9	239.9	221.1	201.5	178.1	160.8	153.3	139.6
<i>*Includes metropolitan transit subsidy received from Provincial Government.</i>										
DISPOSITION OF REVENUE										
Salaries, wages and employee benefits	72.7	67.5	57.9	55.1	49.6	44.0	40.1	36.7	32.9	31.3
Materials and services	53.0	51.0	45.2	40.4	44.9	43.4	36.7	32.5	27.0	23.2
Grants, school taxes, etc.	22.2	20.0	18.6	17.0	15.0	13.3	11.3	10.6	9.9	9.1
Provision for depreciation	57.7	52.9	50.2	44.7	38.6	34.7	31.7	28.8	27.1	25.3
Interest on debt, less interest charged to construction	108.1	97.7	88.9	83.1	63.7	53.2	49.0	44.7	43.2	41.9
Retained in the business (withdrawal)	21.2	16.8	16.1	(.4)	9.3	12.9	9.3	7.5	13.2	8.8
Total	334.9	305.9	276.9	239.9	221.1	201.5	178.1	160.8	153.3	139.6
EXPENDITURES ON PLANT	230.2	217.9	216.0	189.6	227.3	341.2	324.1	227.5	105.3	70.6

OPERATING STATISTICS

YEAR ENDED 31 MARCH	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964
ELECTRIC										
Generating nameplate capacity at year-end (rated kw in thousands)*										
Hydro	3,318	2,814	2,455	2,455	2,001	1,320	1,320	1,306	1,306	1,295
Thermal	1,041	1,038	1,059	1,056	1,055	906	752	738	588	571
Total	4,359	3,852	3,514	3,511	3,056	2,226	2,072	2,044	1,894	1,866
Peak one-hour demand, integrated system (kw in thousands)	3,499	2,970	2,769	2,499	2,357	2,152	1,860	1,686	1,490	1,244
Customers at year-end (in thousands)	765	726	690	652	605	583	555	529	503	478
Electricity sold (kwh)										
Total (in millions)	19,103	16,174	14,833	13,656	12,237	11,084	10,000	8,506	7,345	6,431
Increase over previous year (%).	18.1	9.0	8.6	11.6	10.4	10.8	17.6	15.8	14.2	6.1
By class of customer (%)										
Residential	25	28	28	27	28	28	28	30	31	32
Commercial	20	22	21	21	21	21	20	21	22	23
Industrial	48	48	47	48	49	49	50	48	45	43
Other systems	1	1	1	2	2	2	2	1	2	2
Export**	6	1	3	2	—	—	—	—	—	—
Residential service										
Average annual kwh use per customer.	7,365	7,342	6,949	6,651	6,674	6,222	6,016	5,650	5,486	5,200
Average revenue per kwh (cents).	1.9	1.9	1.9	1.7	1.7	1.7	1.5	1.5	1.8	1.8
*Excludes electricity available from other systems. Rated capacity has been exceeded on occasion.										
**Less than ½ of 1% 1964 through 1969.										
GAS										
One-day capacity at year-end (therms in thousands)										
Mainland—firm pipeline contracts*	2,660	2,400	2,460	2,360	2,529	2,260	2,140	2,020	1,900	1,780
—plant	1,000	1,000	1,000	250	250	250	250	250	250	250
Greater Victoria—plant	60	53	53	45	45	36	36	36	36	36
Peak one-day demand (therms in thousands)										
Mainland system—including interruptible	3,461	3,279	2,939	2,770	3,108	2,537	2,634	2,593	2,341	1,359
—excluding interruptible	3,359	3,065	2,762	1,962	2,889	1,905	1,474	1,493	1,849	1,060
Greater Victoria system	29	29	22	19	24	19	16	17	23	16
Customers at year-end (in thousands)	227	215	205	197	186	178	169	161	153	145
Gas sold (therms)										
Total (in millions)	649	601	554	485	470	391	357	322	306	260
Increase over previous year (%)	8.0	8.5	14.2	3.1	20.2	9.6	10.7	5.3	17.7	8.6
Average revenue per therm (cents)	8.5	8.6	8.6	8.4	8.6	8.8	9.0	9.7	9.8	9.9
*On basis of 100 cu. ft. to one therm.										
PASSENGER TRANSPORTATION										
Vehicles at year-end										
Urban—buses	335	326	353	340	339	340	321	325	336	339
—trolley coaches	293	298	298	296	296	296	296	296	296	312
—total	628	624	651	636	635	636	617	621	632	651
Interurban buses	91	90	85	66	71	70	56	61	70	80
Passengers carried (in millions)										
Urban	76.7	72.6	65.9	78.7	77.4	74.6	72.7	70.7	73.1	75.8
Interurban	2.6	2.5	2.2	2.3	2.2	2.1	2.1	2.0	2.0	2.3
Revenue miles run—urban (in millions)	20.4	20.0	19.3	21.2	20.9	20.8	20.5	20.4	20.5	20.5
Passenger revenue per mile—urban (cents)	85.2	83.7	78.9	71.6	72.1	71.2	70.2	68.4	57.7	52.8
RAIL FREIGHT (tons in thousands)	2,674	2,606	2,200	2,466	2,265	2,057	2,011	1,971	1,832	1,663
EMPLOYEES AT YEAR-END										
Regular	7,474	7,173	7,205	7,056	6,905	6,737	6,452	6,250	6,006	5,761
Temporary	772	669	481	810	717	614	687	647	418	451
Total	8,246	7,842	7,686	7,866	7,622	7,351	7,139	6,897	6,424	6,212

COMMUNITIES SERVED BY B.C. HYDRO









ABBOTSFORD • ABERFELDIE • ADAMS LAKE • AENNOFIELD • AGASSIZ • ALBION • ALBREDA • ALDERGROVE • ALDERMERE • ALERT BAY
 ALEXANDRIA • ALEXIS CREEK • ALEZA LAKE • ALKALI LAKE • ALOUETTE LAKE • ALTA LAKE • ANAHIM LAKE • ANGLEMONT
 ANMORE • ANNACIS ISLAND • ANNIEVILLE • ANNIS • ARGENTA • ARMSTRONG • ARRAS • ARROW PARK • ASHCROFT • ASHTON CREEK
 ASPEN GROVE • ATCHELITZ • ATHALMER • ATLIN • AUSTRALIAN • AVOLA • BALDONNEL • BALMORAL • BAMBERTON • BAMFIELD
 BARKERVILLE • BARNET • BARNHARTVALE • BARNSTON ISLAND • BARRIERE • BARROWTOWN • BASTION BAY • BEACH GROVE
 BEAR CREEK • BEAR LAKE • BEAVER COVE • BEAVER CREEK • BEAVERLY • BEDNESTI • BEDWELL BAY • BELCARRA • BELLA BELLA
 BELLA COOLA • BERYL PRAIRIE • BESSBOROUGH • BEVAN • BIRCH ISLAND • BLACK CREEK • BLACK POINT • BLACKPOOL • BLAEBERRY
 BLIND BAY • BLOEDEL • BLUBBER BAY • BLUE RIVER • BLUE SPRINGS • BOOTHROYD • BOSTON BAR • BOUCHIE LAKE • BOUNDARY
 BAY • BOWEN ISLAND • BOWSER • BRACKENDALE • BRADNER • BRAESIDE • BRALORNE • BRENTWOOD BAY • BRIAR RIDGE • BRIDAL
 FALLS • BRIDGE LAKE • BRIDGE RIVER • BRISCO • BRITANNIA BEACH • BROCKLEHURST • BROOKMERE • BROUSE • BRUNSWICK BEACH
 BUCKHORN LAKE • BUCKLEY BAY • BUCK RIDGE • BUFFALO CREEK • BUICK CREEK • BUNTZEN BAY • BURNABY • BURNS LAKE
 BURTON • CACHE CREEK • CAMBIE • CAMERON LAKE • CAMPBELL CREEK • CAMPBELL RIVER • CAMPBELLTON • CANAL FLATS
 CANFORD • CANIM LAKE • CANOE • CAPE MUDGE • CARLIN • CARQUILLE • CARR'S LANDING • CASSIDY • CAYCUSE • CECIL LAKE
 CEDAR • CEDARSIDE • CEDARVALE • CELISTA • CENTRAL SAANICH • CHAPMAN CAMP • CHAPPERON LAKE • CHARLIE LAKE • CHASE
 CHASE RIVER • CHASM • CHEAM VIEW • CHEHALIS INDIAN RES. • CHEMAINUS • CHERRY CREEK • CHERRYVILLE • CHESLATTA
 CHETWYND • CHIEF LAKE • CHILCO • CHILLIWACK • CHILLIWHACK • CHINA CREEK • CHINA VALLEY • CHINOOK COVE • CHOATE • CHU
 CHUA • CINEMA • CLAYBURN • CLAYHURST • CLAYTON • CLEARBROOK • CLEARWATER • CLEMETTA • CLINTON • CLOVERDALE • CLUCULU
 LAKE • COAL HARBOUR • COBBLE HILL • COLDSTREAM • COLLETVILLE • COLLEYMOUNT • COLQUITZ • COLUMBIA LAKE • COLWOOD
 COMOX • COOMBS • COOPER CREEK • COQUITLAM • CORTES BAY • COTTONWOOD • COURTENAY • COVE CLIFF • COWICHAN • COWICHAN
 BAY • CRAIGELLACHIE • CRAIG'S CROSSING • CRANBERRY LAKE • CRANBROOK • CREIGHTON VALLEY • CRESCENT BEACH • CROFTON
 CROWSNEST • CROYDON STATION • CULTUS LAKE • CUMBERLAND • CYPRESS PARK • DALLAS • DANKIN • D'ARCY • DARFIELD
 DASHWOOD • DAWSON CREEK • DECKER • DECKER LAKE • DEEP BAY • DEEP COVE • DEEP CREEK • DEERHOLME • DEKA LAKE • DELTA
 DENMAN ISLAND • DEPARTURE BAY • DEROCHE • DEVEREAUX • DEVINE • DEWDNEY • DIGBY ISLAND • DOE RIVER • DOLLARTON
 DONALD • DOUGHTY • DOUGLAS • DOUGLAS LAKE • DRAGON LAKE • DRIFTWOOD • DUCK RANGE • DUFFERIN • DUNCAN • DUNCAN BAY
 DUNSTER • DURIEU • EAGLE BAY • EAGLE CREEK • EAGLE HARBOUR • EAST ARROW PARK • EAST BLACK POOL • EAST PINE • EAST
 POUCE COUPE • EAST SOOKE • EDDY • EDGEWATER • EDGEWOOD • EGMONT • 83 MILE HOUSE • ELFKFORD • ELKO • ENDAKO • ENDERBY
 ENGEN • ENGLEWOOD • ENTERPRISE • ERRINGTON • ESQUIMALT • EVELYN • EWING • EXETER • EXLOU • EXTENSION • FAIRBRIDGE
 FAIRMONT • FALKLAND • FANNY BAY • FARMINGTON • FAULDER • FAUQUIER • FELLER HEIGHTS • FERNIE • FINTRY • FLATROCK
 FLOOD • FORDE • FOREMAN • FORESDALE • FOREST GROVE • FORT FRASER • FORT LANGLEY • FORT NELSON • FORT ST. JAMES
 FORT ST. JOHN • FORT STEELE • FOUNTAIN • FRANCIS PENINSULA • FRANCOIS LAKE • FRASER LAKE • FRASER MILLS • FRENCH
 CREEK • FULFORD HARBOUR • GABRIOLA ISLAND • GALIANO ISLAND • GALLOWAY • GAMBIE ISLAND • GANGES • GARDEN BAY
 GARDOM LAKE • GARIBALDI • GIBSONS • GIFFORD • GILLIES BAY • GISCOME • GLENDALE • GLENEDEN • GLEN LAKE • GLENORA
 GLENTANNA • GLEN VALLEY • GLEN VOWELL • GOLATA CREEK • GOLD BRIDGE • GOLDEN • GOLD RIVER • GOLDSTREAM • GOODLOW
 GRAND HAVEN • GRANDVIEW BENCH • GRANDVIEW FLATS • GRANISLE • GRANTHAMS LANDING • GRASSY PLAINS • GREAT
 GREAT CENTRAL • GREENDALE • GREEN LAKE • GRINDROD • GROUND BIRCH • GUNDY • HAGENSBERG • HAIDA • HAIG • HALFMOON
 BAY • HANCEVILLE • HANEY • HANSARD • HAPPY HOLLOW • HAREWOOD • HARRISON HOT SPRINGS • HARRISON MILLS • HARROGATE
 HAT CREEK • HATZIC • HAZELTON • HEADQUARTERS • HEFFLEY CREEK • HENDRICKS LAKE • HERIOT BAY • HILLIERS • HILL'S SIDING
 HIXON • HOLMWOOD • HONEYMOON BAY • HOPE • HOPKINS LANDING • HORNBY ISLAND • HORSEFLY • HORSE LAKE • HOSMER • HOUSTON
 HOWSER • HUDSON HOPE • HULLCAR • HUNGRY HILL • HUNTINGDON • HUPEL • HYDE CREEK • HYDER • INVERMERE • IOCO • IRVINES
 LANDING • ISLE PIERRE • JAFFRAY • JAMES ISLAND • JEUNE LANDING • JOHNSONS LANDING • KAMLOOPS • KANAKA BAY • KATZ
 KAWKAWA LAKE • KEATS ISLAND • KELLY LAKE • KELSEY BAY • KENNEDY LAKE • KENT • KERSLEY • KILGARD • KILKERRAN
 KIMBERLEY • KINGSGATE • KINGVALE • KISPIOX • KISPIOX VALLEY • KITIMAT • KITSULT • KITSEGUECLA • KITWANCOOL • KITWANGA
 KNUTSFORD • KOKISH • KOKSILAH • KUPER ISLAND • KYE BAY • LAC LA HACHE • LADNER • LADYSMITH • LAIDLAW • LA JOIE • LAKE
 COWICHAN • LAKE ERROCH • LAKE KATHLYN • LAKESE • LAKES DISTRICT • LAKEVIEW • LAMMING MILLS • LANG BAY • LANGDALE
 LANGFORD • LANGLEY • LANTZVILLE • LARDEAU • LARKIN • LAVINGTON • LEE CREEK • LEJAC • LEWIS CREEK • LIKELY • LILLOOET
 LINDELL BEACH • LIONS BAY • LITTLE FORT • LITTLE RIVER • LOGAN LAKE • LONE BUTTE • LONG BEACH • LOON LAKE • LOUIS
 CREEK • LOWER BLARCHMONT • LOWER MUD RIVER • LOWER NICOLA • LUMBY • LUND • LUXOR • LYNX CREEK • LYTTON • McBRIDE
 McGILLIVRAY • McLEESE LAKE • McLEOD LAKE • McLURE • McLURE LAKE • McMURDO • MABEL LAKE • MACALISTER • MACKENZIE
 MADEIRA PARK • MAGNA BAY • MAKINSON • MALAHAT • MALAKWA • MAMETTE LAKE • MANSONS LANDING • MAPES • MAPLE BAY
 MAPLE RIDGE • MARA • MARGERITE • MARILLA • MARTIN PRAIRIE • MARYSVILLE • MASSET • MATHER CREEK • MATSUQUI • MAYNE
 ISLAND • MEADOWBROOK • MEADOW CREEK • MEARES ISLAND • MERRITT • MERVILLE • MESACHIE LAKE • METCHOSIN • METLAKATLA
 MICA CREEK • MICHEL • MILBURN LAKE • MILL BAY • MILNER • MILNES LANDING • MIOCENE • MIRACLE BEACH • MISSION • MIWORTH
 MOBERLY BENCH • MOBERLY LAKE • MONTE CREEK • MONTE LAKE • MONTNEY • MOOSE HEIGHTS • MORICETOWN • MOUNTAIN
 VIEW • MOUNT CURRIE • MOUNT LEHMAN • MOYIE • MUD BAY • MURRAYVILLE • MUSKWA • NAKUSP • NANAIMO • NANOOSE • NARCOSLI
 NASS CAMP • NATAL • NAUTLEY INDIAN RES. • NEEDLES • NEW AIYANSH • NEWCASTLE ISLAND • NEW DENVER • NEWGATE • NEW
 HAZELTON • NEWLANDS • NEWTON • NEW WESTMINSTER • NICHOLSON • NICOLA • NICOMEN ISLAND • NIMPO LAKE • 93 MILE HOUSE
 NOOTSATSUM • NORALEE • NORTH BEND • NORTH COWICHAN • NORTH KAMLOOPS • NORTH NECHAKO • NORTH PINE • NORTH SAANICH
 NORTH VANCOUVER • NORTHFIELD • NORTHSIDE • NORTHWEST BAY • NOTCH HILL • NUKKO LAKE • OAK BAY • OCEAN PARK
 OKANAGAN CENTRE • OKANAGAN LANDING • 100 MILE HOUSE • 141 MILE HOUSE • 150 MILE HOUSE • OOTSA LAKE • OTWAY
 OYAMA • OYSTER BAY • OYSTER RIVER • PALDI • PALLING • PARADISE POINT • PARKER ISLAND • PARKSVILLE • PARSON • PAUL LAKE
 PAVILION • PEACHLAND • PEARDONVILLE • PEMBERTON • PENDER HARBOUR • PENDER ISLAND • PEROW • PIERS ISLAND • PINCHI LAKE
 PINEGROVE • PINE VALLEY • PINEVIEW • PITT MEADOWS • PITT POLDER • POPKUM • PORTAGE MOUNTAIN • PORT ALBERNI • PORT
 ALBION • PORT ALICE • PORT CLEMENTS • PORT COQUITLAM • PORT EDWARD • PORT HAMMOND • PORT HARDY • PORT KELLS
 PORT McNEILL • PORT MANN • PORT MELLON • PORT MOODY • PORT RENFREW • PORT SIMPSON • PORT WASHINGTON • PORTEAU
 POUCE COUPE • POWELL RIVER • PRAIRIEDALE • PREMIER LAKE • PRESAPTOU • PRIESTLY • PRINCE GEORGE • PRINCE RUPERT
 PRITCHARD • PROGRESS • PROTECTION ISLAND • PUNTLEDGE • QUADRA ISLAND • QUALICUM BAY • QUALICUM BEACH • QUATHIASKI
 COVE • QUEEN CHARLOTTE CITY • QUESNEL • QUESNEL VIEW • QUICK • QUILCHENA • RADIUM HOT SPRINGS • RAYLEIGH • RED BLUFF
 RED ROCK • REID LAKE • REMO • REVELSTOKE • RICH BAR • RICHMOND • RISKE CREEK • RIVER JORDAN • ROBERTS CREEK • ROLLA
 ROOSVILLE • ROSEBERY • ROSEDALE • ROSE HILL • ROSE LAKE • ROSE PRAIRIE • ROUND LAKE • ROYSTON • RUBY CREEK • RUMBLE
 BEACH • RUSKIN • SAANICH • ST. EUGENE MISSION • ST. JOSEPH MISSION • STE. MARIE LAKE • ST. MARY LAKE • SALMON ARM
 SALMON VALLEY • SALT AIR • SALTIER BAY • SALTSRING ISLAND • SANDSPIT • SANDWICK • SARDIS • SATURNA ISLAND • SAVONA
 SAYWARD • SCOTCH CREEK • SEABIRD ISLAND • SEAFORD • SECHLT • SECRET COVE • SELMA PARK • SETON PORTAGE • 70 MILE
 HOUSE • SEYMOUR LAKE • SHALALTH • SHANNON LAKE • SHAWNIGAN LAKE • SHAW SPRING • SHEARER DALE • SHEARWATER
 SHEEP CREEK • SHELLEY • SHELTER POINT • SHUSWAP • SICAMOUS • SIDNEY • SILVER CREEK • SILVERDALE • SILVERTON • SINCLAIR
 MILLS • SIX MILE LAKE • SKIDEGATE • SKIDEGATE MISSION • SKOOKUMCHUCK • SKOOKUMCHUCK PRAIRIE • SLIAMMON • SMITHERS
 SODA CREEK • SOINTULA • SOLSQUA • SOOKE • SORRENTO • SOUTHBANK • SOUTH DAWSON • SOUTH FT. GEORGE • SOUTH HAZELTON
 SOUTH TAYLOR • SOUTH WELLINGTON • SOUTH WESTMINSTER • SPALLUMCHEEN • SPARWOOD • SPENCES BRIDGE • SPILLMACHEEN
 SPRINGHOUSE • SPROAT LAKE • SPUZZUM • SQUAAM BAY • SQUAMISH • SQUILAX • SQUIRREL COVE • STAVE FALLS • STEELHEAD
 STELLAKNO INDIAN RES. • STEVESTON • STEWART • STILLWATER • STONER • STONEY CREEK INDIAN RES. • STRACHAN CREEK
 STRAITON • STRATHNAVER • STREATHAM • STUMP LAKE • SUGAR LAKE • SULLIVAN • SULPHUROUS LAKE • SUMMIT LAKE • SUNNYBRAE
 SUNNYBROOK • SUNRISE VALLEY • SUNSET BEACH • SUNSET PRAIRIE • SUNSHINE FALLS • SURREY • SWAN LAKE • SWARTZ BAY
 SWEETWATER • TAFT • TAHISIS • TAKYSIE LAKE • TAPPEN • TA TA CREEK • TATALROSE • TATLOW • TATTON • TAYLOR • TCHESINKUT
 LAKE • TELACHIK • TELEGRAPH COVE • TELKWA • TEN MILE LAKE • TERRACE • TETE JAUNE CACHE • TEXADA ISLAND • THETIS
 ISLAND • TILBURY ISLAND • TIMOTHY HILL • TINTAGEL • TOFINO • TOMSLAKE • TOPYLE • TOPYLE LANDING • TORRENT • TRANQUILLE
 TREPANIER • TRIAL ISLAND • TRINITY VALLEY • TROUT CREEK • TSAWWASSEN • TUPPER • TURTLE VALLEY • TWO MILE FLATS
 TWO RIVERS • UCLUELET • UNION BAY • UNIVERSITY ENDOWMENT LANDS • UPPER BLARCHMONT • UPPER CHASE CREEK • UPPER
 CLEARWATER • UPPER CUTBANK • UPPER FRASER • UPPER KISPIOX • UPPER MUD RIVER • USK • VALEMOUNT • VALLEYVIEW • VANANDA
 VANCOUVER • VANDERHOOF • VAVENBY • VEDDER CROSSING • VERNON • VESUVIUS BAY • VICTORIA • VIEW ROYAL • VINSULLA
 WALDO • WALHACHIN • WALNUT GROVE • WARDNER • WASA • WATCH LAKE • WEBSTERS CORNERS • WELLINGTON • WELLS • WENEZE
 WESTBANK • WESTHAM ISLAND • WESTHOLME • WESTSYDE • WEST VANCOUVER • WESTVIEW • WESTWOLD • WHALETOWN • WHALLEY
 WHITE ROCK • WHONNOCK • WILDWOOD • WILLIAMS LAKE • WILLIAMSONS LANDING • WILLOW POINT • WILLOW RIVER • WILLOW
 VALLEY • WILMER • WILSON CREEK • WILSON LANDING • WINDERMERE • WINFIELD • WISTARIA • WOODLANDS • WOODPECKER • WRIGHT
 WYCLIFFE • YAHK • YALE • YANKEE FLATS • YARROW • YELLOW POINT • YOUNG • ZEBALLOS

FOLD OUT MAP OF ELECTRIC TRANSMISSION SYSTEM

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

ELECTRIC TRANSMISSION SYSTEM AT 31 MARCH 1973 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 | Port Mann:
Gas-Turbine |
| Burrard:
Steam-Turbine | Ruskin:
Hydroelectric |
| Lake Buntzen:
Hydroelectric | Stave Falls:
Hydroelectric |

MAJOR SUBSTATIONS

- | | |
|-------------|--------------------|
| Arnott | Ingladew |
| Atchelitz | Kidd, Nos. 1 and 2 |
| Camosun | Mainwaring |
| Cypress | Murrin |
| Dal Grauer | Newell |
| Horne-Payne | Walters |

VICTORIA AREA

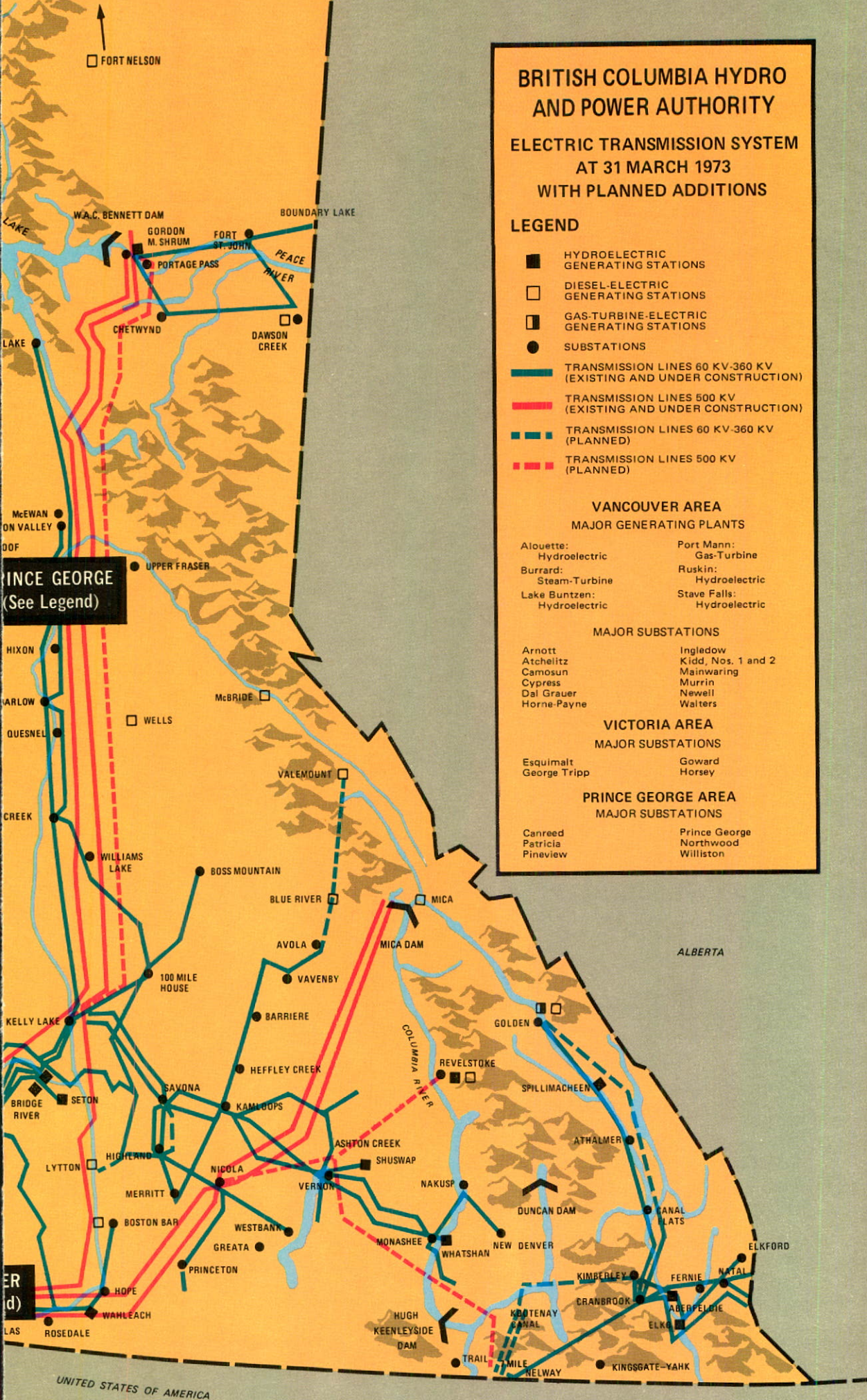
MAJOR SUBSTATIONS

- | | |
|--------------|---------|
| Esquimalt | Goward |
| George Tripp | Horsley |

PRINCE GEORGE AREA

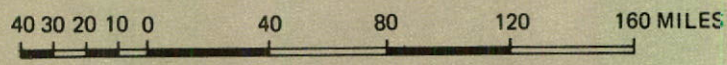
MAJOR SUBSTATIONS

- | | |
|----------|---------------|
| Canreed | Prince George |
| Patricia | Northwood |
| Pineview | Williston |



PRINCE GEORGE
(See Legend)

ER
(d)





ALASKA (U.S.A.)

QUEEN CHARLOTTE ISLANDS

BRITISH COLUMBIA

N

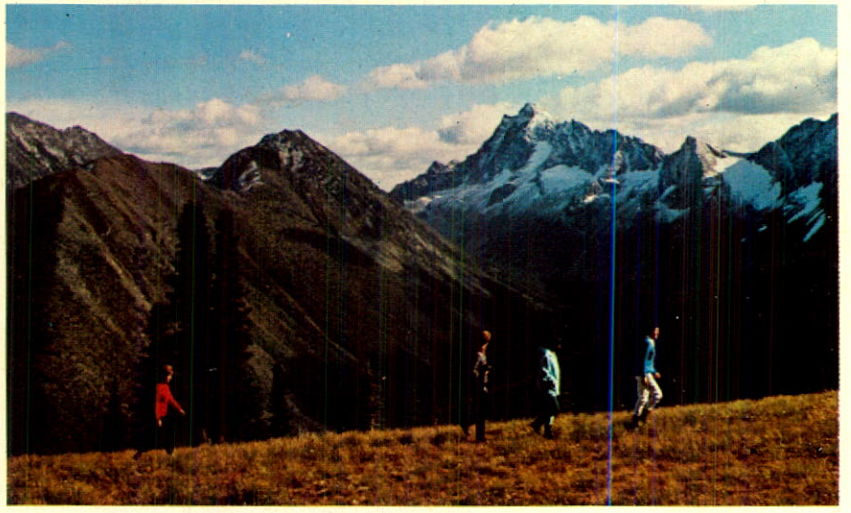
C A N A D A

VANCOUVER
(See Legend)

VICTORIA
(See Legend)



1



2

The scenic beauty and recreational resources of British Columbia present all of us with a challenge: to preserve and protect these unspoiled areas for the benefit of present and future generations.



3



5



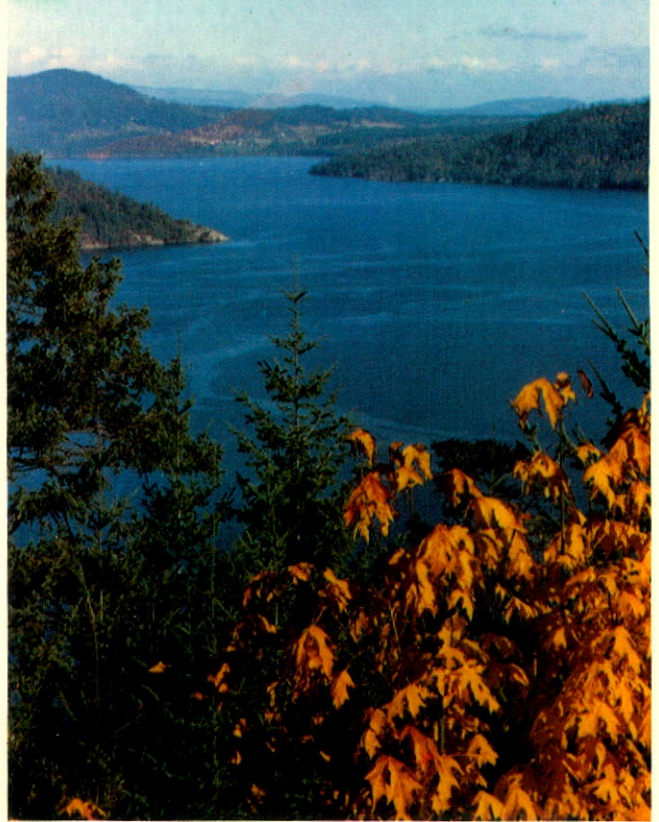
4



6



7



10



8



11



9



12

- | | |
|-----------------------------------|-----------------------------------|
| 1. Dutch Lake | 7. Chilcotin River, near Redstone |
| 2. Centennial Trail, Manning Park | 8. Nimpo Lake |
| 3. McKenzie Beach, Tofino | 9. Big White Mountain |
| 4. Near Trout Lake | 10. Saanich Inlet |
| 5. Box Lake | 11. Canada Goose |
| 6. Near Armstrong | 12. Kalamalka Lake |

Photographs are courtesy of Film and Photographic Branch, Government of British Columbia Department of Travel Industry.

