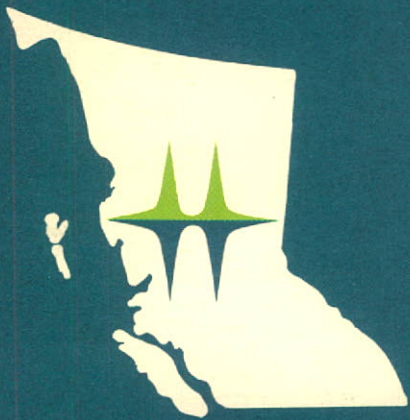


C stack

FOURTH ANNUAL REPORT
Year ended 31 March 1966



BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

PURVIS HALL
LIBRARIES
AUG 5 1966
MCGILL UNIVERSITY

AUG 5 1966



Portage Mountain Dam, Peace River Project.



Diversion Tunnels, Duncan Storage Project.

THE BUSINESS OF THE AUTHORITY AND THE AREAS SERVED (See map, inside back cover)

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 eastward to Hope.
Distribution of liquefied petroleum gas-air in Greater Victoria.

Passenger Transportation Service

Urban passenger transportation in Greater Vancouver and Greater Victoria.
Interurban passenger transportation in Greater Vancouver, the Fraser Valley eastward to Hope, between Vancouver and Victoria and between Vancouver and Nanaimo.

Rail Freight Service

Rail freight operations in Greater Vancouver and the Fraser Valley.

Auditors: PRICE WATERHOUSE & CO.

Bankers: CANADIAN IMPERIAL BANK OF COMMERCE

Securities issued by British Columbia Hydro and Power Authority:
Registrar: THE AUTHORITY

Securities issued by British Columbia Electric Company Limited:
Registrar, Perpetual Callable Bonds and 25-year Bonds: MONTREAL TRUST COMPANY
Registrar and Trustee, First Mortgage Bonds: MONTREAL TRUST COMPANY
Registrar and Trustee, Debentures: THE ROYAL TRUST COMPANY

Securities issued by British Columbia Power Commission:
Registrar: THE AUTHORITY



THE PRIME MINISTER

VICTORIA

1 9 6 6

June 15th

Major-General the Honourable George Randolph Pearkes, V. C., P. C., C. B., D. S. O., M. C., 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 31st March, 1966.

Prime Minister

CONTENTS

Letter of Transmittal	1	Cost of Providing Services	10
Directors, Officers and Senior Management	2	Financing	11
Chairmen's Letter	3	Columbia River Treaty Funds	11
The Year in Brief	4	Statement of Source and Application of Funds	11
Results of Operations	5	Construction Program	12
Rate Reductions	5	Peace River Project	15
Electric Service	6	Duncan, Arrow and Mica Storage Projects	16
Sale of Electricity	6	Corporate Organization	17
Regions	6	Employees	17
Production of Electricity	7	Outlook	18
Gas Service	8	Financial Statements	19
Transportation Services	9	Financial Statistics	26
Urban Transportation	9	Operating Statistics	27
Interurban Transportation	9	Centenary	28
Rail Freight	9	Map of Electric Transmission System	Inside Back Cover

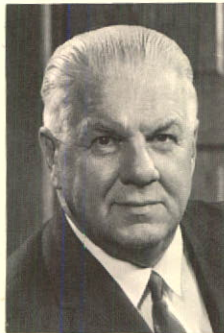
BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Head Office: 970 Burrard Street, Vancouver 1, B.C., Canada

Directors and Officers



JOHN DUNSMUIR



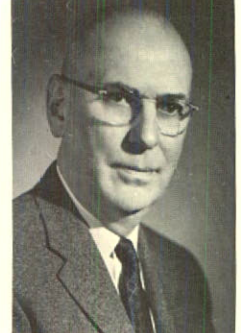
EINAR M. GUNDERSON*



HUGH L. KEENLEYSIDE*
Chairman



THE HONOURABLE
W. KENNETH KIERNAN



F. ARTHUR LEE



FRED D. MATHERS



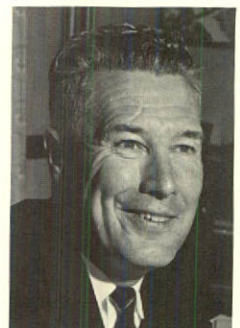
WILLIAM C. MEARNS*



GORDON M. SHRUM*
Chairman



FREDERICK A. SMITH



THE HONOURABLE
RAY G. WILLISTON

GEOFFREY G. WOODWARD *Secretary*

MRS. P. ROSS KIDD *Assistant Secretary*

**Member of the Executive Management Committee*

Senior Management

PHILIP W. BARCHARD *Division Manager – Operations*
20 years' service

WILLIAM H. Q. CAMERON *General Solicitor and Division*
Manager – Legal 19 years' service

THOMAS CHAMBERS *Comptroller and Chief Financial Officer*
20 years' service

HUGH A. ELLIOTT *Division Manager – Commercial Services*
30 years' service

G. FREDERIC GREEN *Division Manager – Production*
29 years' service

GARTH GRIFFITHS *Division Manager – Staff Services*
20 years' service

ROBERT W. GROSS *Division Manager – Land*
20 years' service

W. DENIS KENNEDY *Division Manager – Major Resources*
6 years' service

J. STUART LANG *Internal Auditor*
20 years' service

ROBERT C. McMORDIE *Columbia Projects Manager*
10 years' service

J. PETER OTTESEN *Construction Manager – Major Hydro Projects*
2 years' service

JOHN S. PURVES *Division Manager – Purchasing and Stores*
37 years' service

SIGURDUR SIGMUNDSON *Division Manager – Transportation*
21 years' service

JOHN H. STEEDE *Chief Engineer and Division*
Manager – Engineering 41 years' service

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

OFFICE OF THE CHAIRMAN

970 BURRARD STREET

VANCOUVER 1, B.C.

13 June 1966

The Honourable W. A. C. Bennett, LL.D., D.Pol.Sc.,
Prime Minister of British Columbia,
Parliament Buildings,
Victoria, B.C.

Dear Sir:

On behalf of the Board of Directors, we present herewith the Annual Report of British Columbia Hydro and Power Authority for the fiscal year ended 31 March 1966.

For the first time in the history of the Authority and its predecessors, expenditures on new plant during a single 12-month period exceeded \$227 million. This massive outlay, while contributing notably to the economic growth of the Province, placed a heavy burden on the manpower and material resources of the Authority.

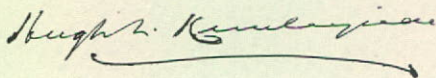
Excellent progress was made during the year on the Peace River Project. Working round the clock during the construction season, contractors placed 18.5 million cubic yards of fill at Portage Mountain Dam, raising the height of the dam to 240 feet. Below the dam, excavation of the world's largest underground powerhouse was started and continued through the winter.

Construction of the Duncan, Arrow and Mica storage projects was pressed forward during the year. Despite severe winter weather, particularly at the Mica project, the work is on schedule, with several important phases ahead of schedule. The Duncan River was successfully diverted in March 1966 and construction of the dam is in progress on the dry river bed. In the same month a start was made on the concrete section of Arrow Dam, nearly three months ahead of schedule.

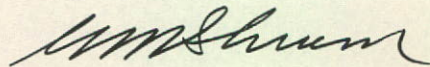
Further rate reductions were announced in March 1966 - the fifth successive year in which rates have been reduced. The latest reductions will save gas consumers on the Lower Mainland and in Greater Victoria about \$1.8 million a year. Rate reductions have saved the Authority's electric and gas customers \$60 million in the past four years.

The demand for electricity continued to grow at a remarkable rate during the year. Kilowatt-hour sales to consumers in all categories increased by 15.8%, nearly double the 8.3% average annual increase for the preceding five years. Before Peace River power becomes available the Authority's hydro and thermal plants will be operating at full capacity and increased purchases of power will probably be required. No effort will be spared to ensure that uninterrupted service is maintained during the critical period ahead.

Yours truly,



CHAIRMAN



CHAIRMAN

THE YEAR IN BRIEF

- *Reductions in gas rates effective 1 April 1966 will save consumers about \$1.8 million a year; cumulative savings to electric and gas customers from rate reductions since the formation of the Authority totalled \$60 million to 31 March 1966.*
- *Net income for the year was \$7,523,389 compared with \$13,162,522 last year.*
- *Kilowatt-hour sales of electricity were 15.8% higher than last year.*
- *Therms of gas sold were 5.3% higher than last year.*
- *Construction of the 2,300,000 kw Peace River Project continued generally on schedule; total expenditures to 31 March 1966 were \$147,459,931.*
- *Excellent progress was made on construction of the Duncan, Arrow and Mica storage projects; total expenditures to 31 March 1966 were \$97,914,505.*
- *Expenditures on new plant, including the Peace, Duncan, Arrow and Mica projects, were \$227,457,696, a record for any 12-month period.*

ANNUAL REPORT OF BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

For the year ended 31 March 1966

RESULTS OF OPERATIONS

Gross revenues for the year ended 31 March 1966 amounted to \$160,777,546, an increase of \$7,470,263 or 4.9% over the gross revenues for the previous year.

Net income after providing for all expenses was \$7,523,389, compared with \$13,162,522 for the previous year. The net income was added to stabilization of rates and contingency reserve and the corresponding funds have been used for plant renewals and expansion to meet load growth.

The following table shows the principal sources of revenue and how this revenue was used in the operations of the Authority:

	Year Ended 31 March 1966	Year Ended 31 March 1965
Where the revenue came from		
Sale of electricity to residential customers.....	\$ 38,059,716	\$ 40,633,822
Sale of electricity to other customers.....	66,858,262	60,387,337
Sale of gas.....	31,198,277	29,995,708
Transportation of urban and interurban passengers.....	16,896,109	14,533,723
Rail freight operations.....	6,158,016	5,868,406
Miscellaneous.....	1,607,166	1,888,287
	<u>\$160,777,546</u>	<u>\$153,307,283</u>

How the revenue was used

Salaries, wages and employee benefits.....	\$ 36,702,973	\$ 32,916,747
Materials and services.....	32,510,332	26,974,881
Grants, school taxes, transit franchises, etc.....	10,556,265	9,850,489
Interest and other costs on debt, less interest charged to construction.....	44,644,470	43,270,890
Depreciation of plant.....	28,840,117	27,131,754
Balance employed in the business.....	7,523,389	13,162,522
	<u>\$160,777,546</u>	<u>\$153,307,283</u>

RATE REDUCTIONS

On 30 March 1966 further reductions in rates to consumers were announced by the Authority. This is the fifth successive annual reduction in electric or gas rates, or both. The latest reductions will save gas consumers on the Lower Mainland and in Greater Victoria about \$1.8 million a year. Rate reductions since the formation of the Authority now amount to \$22.1 million annually, including \$2.9 million in gas rate reductions. Cumulative savings to consumers since 1962 as a result of rate reductions totalled \$60 million to 31 March 1966.

ELECTRIC SERVICE

Sale of Electricity

Gross revenues from the electric service were \$104,917,978, an increase of 3.9% over last year. Kilowatt-hours of electricity sold during the year rose by a remarkable 15.8% over last year, nearly double the 8.3% average annual rate of increase for the preceding five years. The relatively small percentage increase in gross revenues, compared with the substantial increase in kilowatt-hours sold, results mainly from the electric rate reductions made last year.

Impressive rates of increase in kilowatt-hours consumed were recorded for all categories of customers. The following table shows percentage increases in kilowatt-hour sales and relative consumption of electricity:

KILOWATT-HOUR SALES		
	% Increase over Last Year	% of Total
Residential	8.7	29.5
General	12.6	20.1
Industrial	13.0	14.2
Bulk power	26.0	33.8
Other	9.7	2.4
Total	15.8	100.0

At 31 March 1966 the number of customers receiving electric service from the Authority was 529,241, up 26,398 from last year. The average annual rate for residential customers

dropped from 1.76 cents to 1.52 cents a kilowatt-hour, while average annual residential consumption rose from 5,486 kwh to 5,650 kwh.

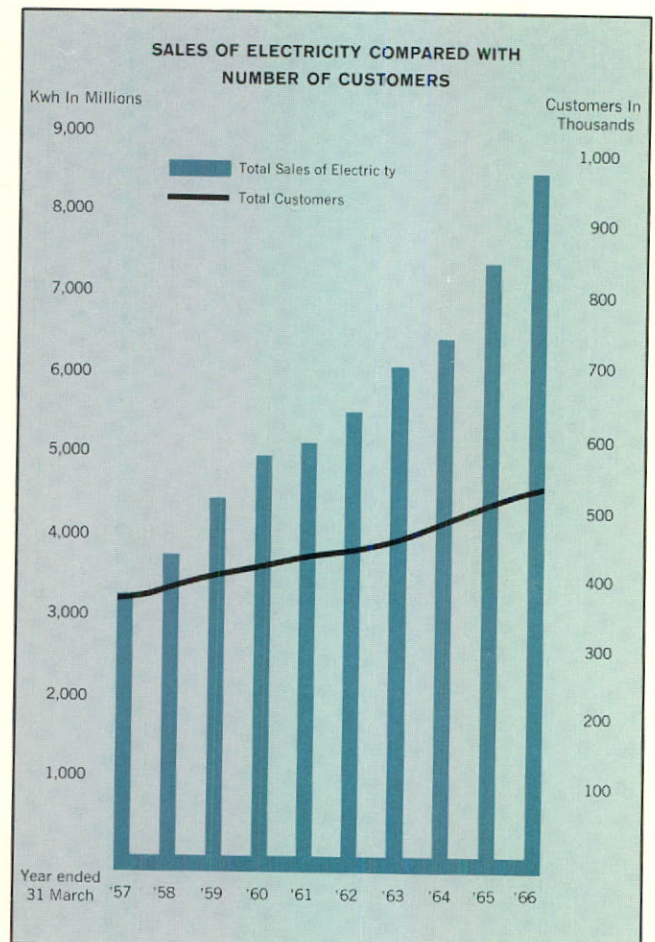
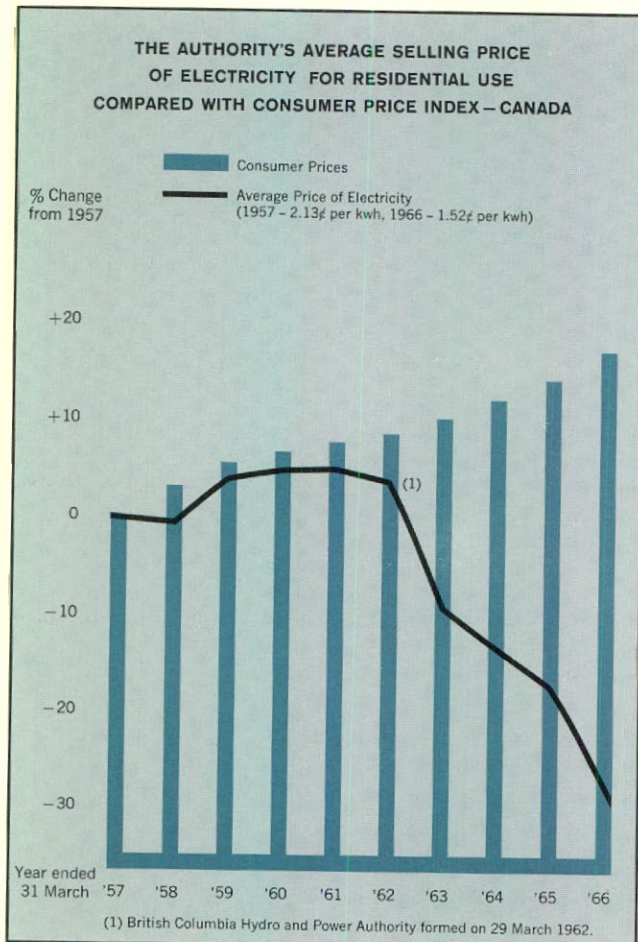
In all regions electric space-heating is rapidly gaining acceptance for houses, apartments, motels and schools. The number of electrically heated dwellings in the Authority's service areas increased substantially during the year against strong competition from oil and natural gas. The use of electricity in agriculture is also increasing, particularly for irrigation, crop drying, silo filling and care of livestock. The Authority installed nearly 3,700 new street lights during the year.

Metropolitan Vancouver Region

A record number of residential customers were added during the year, primarily as a result of the continuing trend towards high-rise apartment living. New overhead distribution lines built during the year totalled 39.5 miles. Underground cables in this region now total 339 miles of which 15 miles were installed during the year.

FMC Chemicals Ltd. commenced operations at Squamish in November 1965, adding an important new industrial load to the Regional system.

New communities served during the year included Alta Lake and the new ski resort at Whistler Mountain.



Fraser Valley Region

The number of new customers connected to the Authority's system in the Lower Fraser Valley during the year was twice that of last year. The Port Mann freeway has facilitated access to the valley and has stimulated urban growth and the development of secondary industry. Distribution line extensions constructed during the year totalled 28.6 miles.

Vancouver Island Region

A high rate of economic growth continued on Vancouver Island during the year, with a rising demand for underground wiring and electric space-heating. The demand for power by heavy industry, principally pulp and paper manufacture, increased 21%.

The communities of Beaver Cove, Gold River, Nootsatsum and Piers Island were added to the Authority's system during the year and 70 miles of new distribution circuits were placed in service. Improved ferry transportation has resulted in increasing numbers of applications for electric service from residents of the Gulf Islands.

In late December and early January Vancouver Island experienced its heaviest snowfall in 35 years, causing widespread service interruptions. Distribution circuits carrying power to customers were cut by trees falling on the lines. The heavy snowfall blocked roads, greatly impeding efforts to restore service. Cost of emergency repairs was nearly \$200,000.



Hot-line crew replacing live 230 kv risers at Williston Substation, Prince George.

Southern Interior Region

The communities of Argenta, Aspen Grove, Avola, Cooper Creek, Howser, Johnson's Landing, Kingsvale, Lardeau, Meadow Creek and Moberley Bench were served by the Authority for the first time during the year. Service was also provided at the Mica dam site and village in September 1965. A total of 160 miles of new distribution lines were built.

Major additional demands for power were received during the year from the forest industry, notably from Kamloops Pulp and Paper Co. Ltd. mills at Kamloops and Avola, Holding Lumber Company Limited at Adams Lake and Selkirk Spruce Mills Limited in the Columbia Valley. Power sales were adversely affected, however, by industrial strikes at Merritt and Kamloops.

Central Interior Region

Economic expansion continued at a very high level in the central interior of the Province during the year. Two pulp mills were under construction at Prince George and one at Prince Rupert. A third pulp mill and an oil refinery at Prince George, a pulp mill at Quesnel and a pulp and sawmill operation at Morfee Lake are among further major developments in the planning stage.

New distribution lines built during the year totalled 335 miles. New communities added to the Authority's system included Alexis Creek, Bridge Lake, Hanceville, Hendricks Lake, Moricetown and Riske Creek.

Production of Electricity

The maximum one-hour demand on the Authority's integrated system during the year was 1,686,000 kw on 25 January 1966. This record one-hour demand exceeded the preceding year's peak - also a record - by 13.2%.

Total electrical energy requirements during the year were 9,611 million kwh compared with 8,260 million kwh last year. Of this total, 6,702 million kwh were produced by hydro-electric stations, 403 million kwh less than last year when water conditions were unusually favourable. Electricity generated by thermal plants totalled 2,358 million kwh. The balance of 551 million kwh was purchased from other utilities.

Total installed nameplate generating capacity at 31 March 1966 was 2,044,228 kw, up 8.0% from last year. Hydro capacity was unchanged at 1,305,722 kw; thermal capacity increased to 738,506 kw, primarily as a result of the addition of a third 150,000 kw unit at Burrard Thermal Generating Plant.

The Authority makes extensive use of diesel-powered generating stations to meet the electrical load growth in remote communities to the point where high voltage transmission lines are justified. Total installed diesel capacity at 31 March 1966 was 113,006 kw including twelve mobile units used to augment service where necessary.

Live Line Training

Work on live lines received continuing attention both in research and in training line crews. Bare-hand technique, with the lineman standing in an insulated bucket mounted on an insulated boom, was extended experimentally to all system voltages.

GAS SERVICE

Gross revenues from the sale of gas to the public were \$31,198,277, up 4.0% from last year. Customers receiving gas service rose by 7,835 to 160,953, an increase of 5.1%. Weather conditions, which have a marked influence on residential gas sales, were generally milder than last year. The number of degree days recorded at the Vancouver Airport was only slightly greater than normal and 9.7% less than last year.

The peak one-day output of gas on the Lower Mainland during the year, including gas delivered to Burrard Thermal Generating Plant, was 246 million cubic feet on 4 January 1966. This output exceeded the previous peak, established 15 December 1964, by 12.5%.

Gas space-heating continued to make steady gains on the Lower Mainland where residential gas heating services rose by 7.9% to 115,638 at the year-end. Gas heating is selected for about 95% of new houses in the Authority's natural gas service areas.

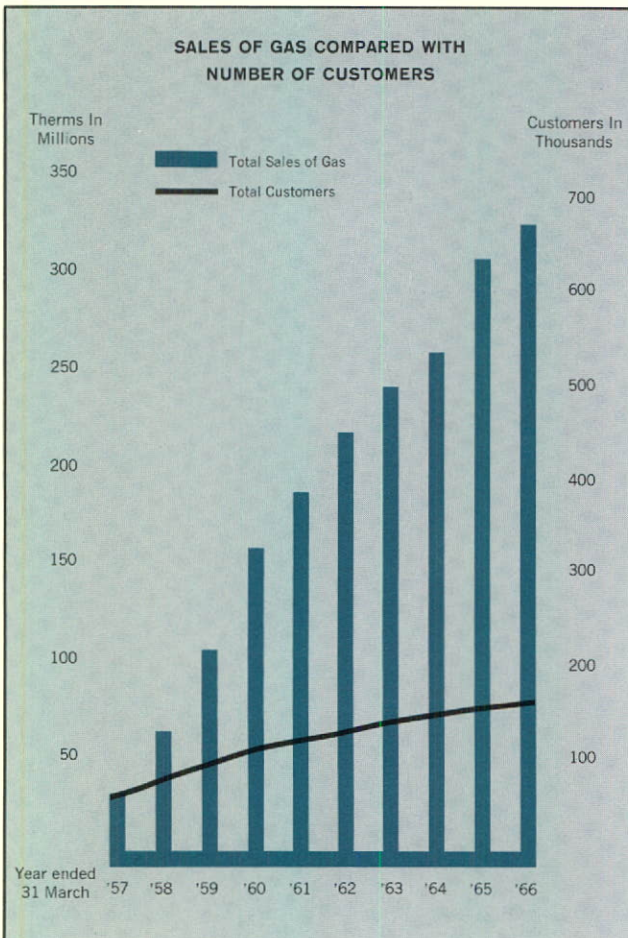
Other major developments during the year included the following:

- (a) The net increase in natural gas mains laid was 123 miles, bringing the total to 2,927 miles at the year-end.

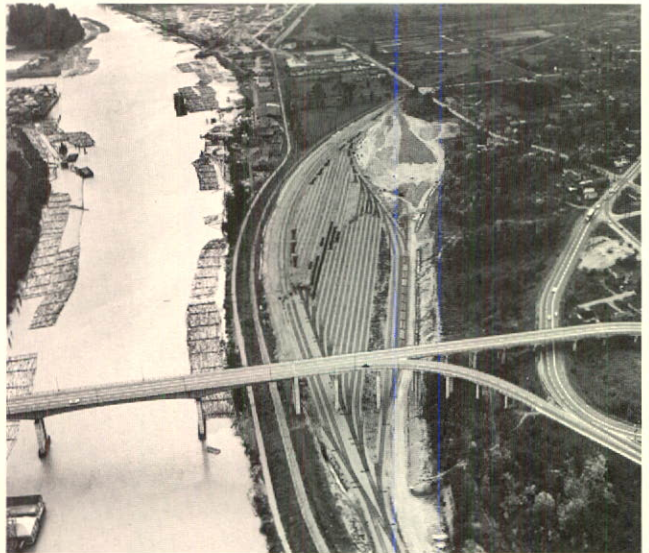
- (b) The Authority installed its first gas pipeline under salt water, to serve Eagle Island, West Vancouver.

- (c) Natural gas consumption at Burrard Thermal Generating Plant exceeded 19 billion cubic feet or 37.8% of total natural gas purchased on the Lower Mainland. (Comparable figures last year were 4 billion cubic feet or 12.1% of total natural gas purchased.)

The Authority's natural gas requirements on the Lower Mainland are purchased from Westcoast Transmission Company Limited. Under the terms of the purchase agreements the daily billing demand for firm gas at 31 March 1966 was 142.9 million cubic feet, up 4.1 million cubic feet from the same date last year.



The Authority's first natural gas pipeline under salt water, serving Eagle Island, West Vancouver.



New railway yard for the Authority's rail freight system.

TRANSPORTATION SERVICES

Urban Transportation

Gross revenues from the urban transportation services during the year were \$14,044,258, up \$2,151,925 or 18.1% compared with last year. The increase is attributable primarily to the new fares introduced on 1 January 1965.

There are signs that the downward trend in the number of passengers carried on the Authority's urban transit services – a trend which, with minor variations, has continued since the end of the second world war – may be reversing. As both population and traffic congestion increase, greater use of public transit facilities can be expected.

An active advertising campaign to promote travel by bus was conducted throughout the year and met with considerable success. Two passes were introduced: a "Downtown" pass for unlimited riding between 9:00 a.m. and 3:30 p.m. on all lines in downtown Vancouver, and another pass for unlimited travel on all lines on Sundays and holidays. These passes have been well accepted by the public; old age pensioners in particular are using the passes to their advantage.

Sixty-five new buses were purchased during the year. Of these, fifty were placed in service in the Greater Vancouver area and ten in Greater Victoria. The remaining five buses are specially designed and were purchased to provide service to Simon Fraser University on the summit of Burnaby Mountain. An additional forty buses have been ordered for delivery in 1966.

Interurban Transportation

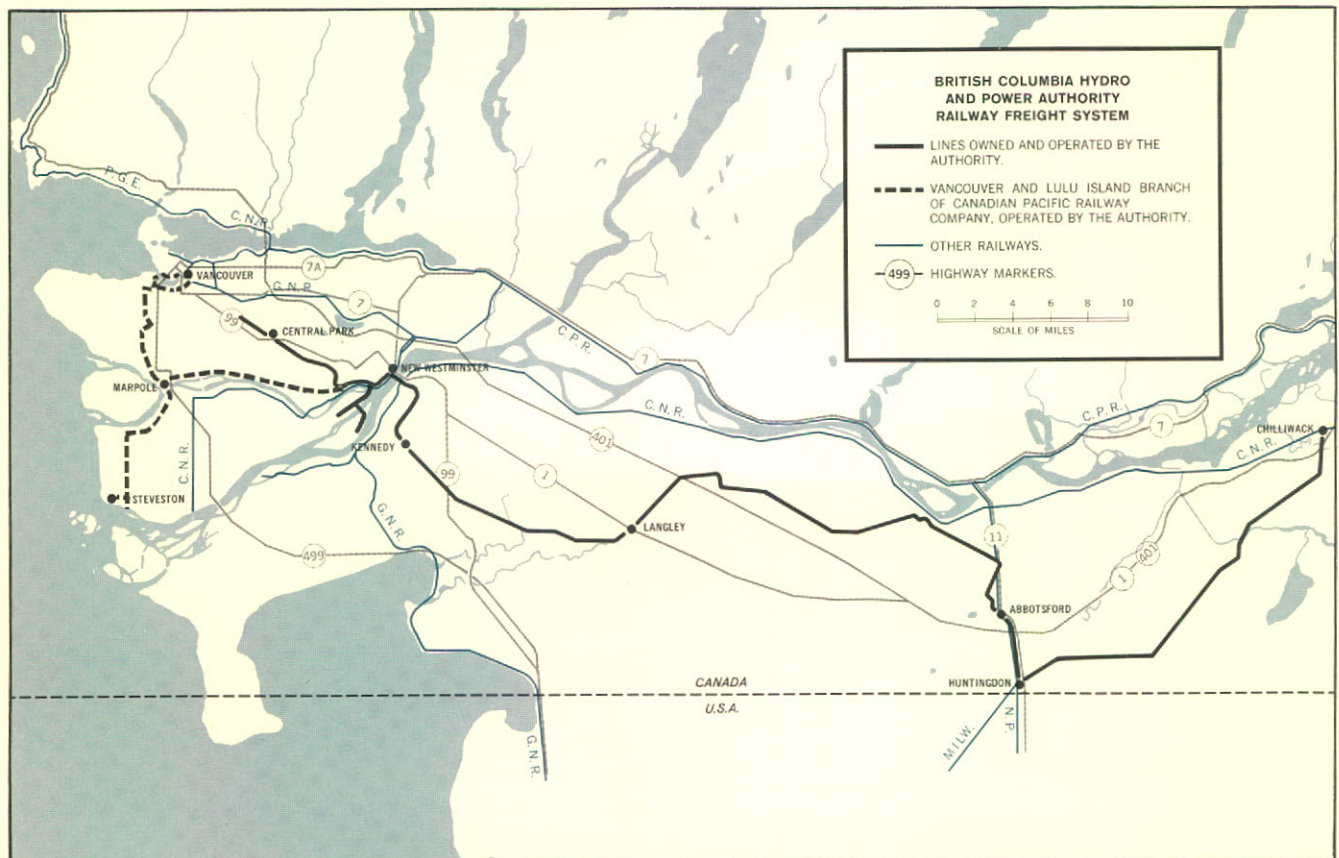
Pacific Stage Lines' gross revenues rose by 8.0% to \$2,851,851 during the year, mainly as a result of increased patronage of the bus services between Vancouver and Victoria and between Vancouver and Nanaimo. The charter, parcel express and escorted tour services also made satisfactory gains compared with last year.

Rail Freight

Gross revenues from rail freight operations exceeded \$6 million for the first time in any single year, up 4.9% from last year. There was a marked increase in the volume of manufactured goods carried during the year.

The new railway yard at New Westminster was officially opened for service in October 1965. It has 39,000 feet of track with a standing capacity of 540 cars and can be expanded as required.

Twenty new industrial customers purchased land adjacent to the Authority's railway lines during the year and are proceeding to construct plants on these properties. In addition, a record number of enquiries have been received from industries indicating an interest in establishing plants near the Authority's railway lines. Thirteen new private railway spurs were built during the year. At the current high level of industrial expansion on the Lower Mainland an active period of railway line development and spur construction is expected in the coming year.



COST OF PROVIDING SERVICES

The total cost of providing all services during the year was \$153,254,157, an increase of \$13,109,396 or 9.4% over the previous year.

Interest and other costs on debt charged against revenues were \$44,644,470, an increase of \$1,373,580 or 3.2% over the previous year. Provision for depreciation of plant was \$28,840,117 compared with \$27,131,754 last year, an increase of 6.3%. Increases in net interest charges and provision for depreciation are directly related to the completion and transfer to active service of new plant and to property acquisitions. The Authority's depreciation rates are comparable to those used by other utilities.

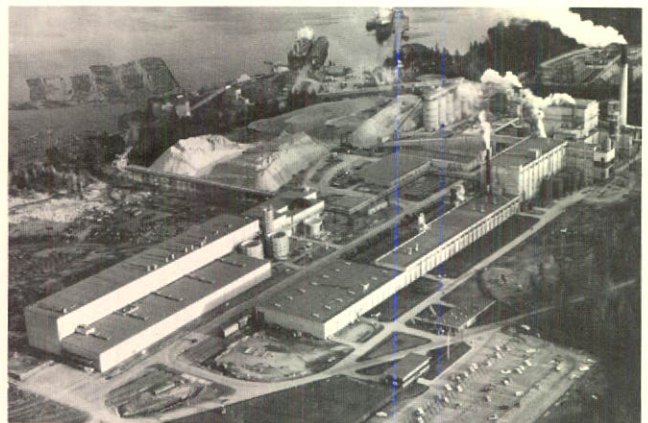
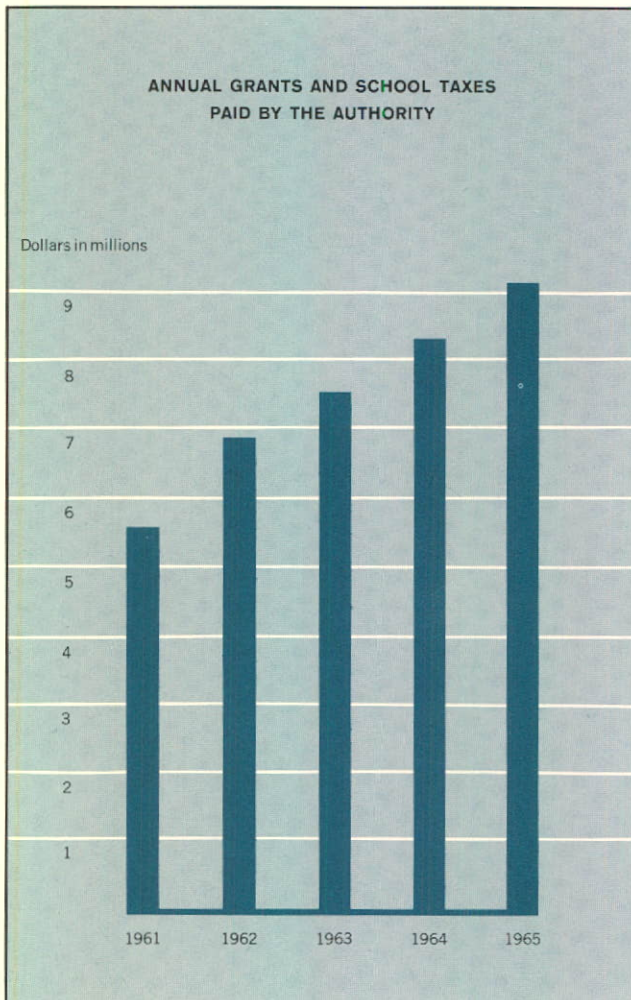
Salaries, wages and employee benefits charged to operations amounted to \$36,702,973, an increase of 11.5% over the previous year. Major factors causing this increase were higher rates of pay resulting from union agreements, an increase of 244 in the number of regular employees, and increased pension costs including provision for minimum pensions under the new pension plan.

During the year hydro plants supplied 69.7% of the total kilowatt-hour requirements compared with 86.0% last year; the portion from thermal plants increased to 24.5% from 9.4% a year ago. The large increase in the proportion of total energy requirements generated by thermal plants was necessary to meet the demand and contributed substantially to the higher cost of power. At Burrard Thermal Generating Plant alone the cost of fuel was up \$3,986,586 from last year.

Purchases of natural gas from Westcoast Transmission Company Limited rose to \$16,830,288, an increase of \$5,074,654 or 43.2% over the previous year.

Grants, school taxes, water rentals and franchise payments charged to operations during the year totalled \$10,556,265, an increase of \$705,776 or 7.2% over last year.

Land, buildings and improvements of the Authority are assessed and taxed each year in accordance with the requirements of the Public Schools Act. The Authority pays school taxes on the same basis as any other taxpayer. In addition to school taxes the Authority makes annual grants to municipalities and other local governments for general purposes.



A large pulp and paper manufacturing plant – one of several served by the Authority.



Beauty by flood light – City Hall and fountain, Centennial Square, Victoria.

FINANCING

The following three long-term issues were sold by the Authority during the year at an average interest cost of 5.5%: \$10,000,000 of 5¾% sinking fund bonds Series S due 15 September 1995; \$29,000,000 of 5½% sinking fund bonds Series T due 29 December 1995; and \$5,085,000 of 5.29% sinking fund bonds Series V-A due 2 March 1986.

On 1 September 1965 British Columbia Electric Company Limited 5½% Parity Development Bonds Series A, in the amount of \$85,650,400, reached maturity and were repaid from the proceeds of two new issues: \$50,505,000 of 5% Parity Development Bonds Series P due 1 September 1969; and \$50,505,000 of 5% Parity Development Bonds Series R due 1 September 1970.

On 16 February 1966 the Authority was empowered by Order-in-Council to borrow up to \$75 million during the coming year by the sale of bonds to the Canada Pension Plan Investment Fund. The sale of Series V-A sinking fund bonds referred to above was the first such borrowing.

The amount of \$15,064,859 was paid to Trustees during the year to meet sinking fund requirements of the Authority's long-term debt. All sinking fund obligations have been met.

All bonds and other securities issued by the Authority and its predecessors are unconditionally guaranteed as to principal and interest by the Province of British Columbia.

Columbia River Treaty Funds

Following exchange of ratifications of the Columbia River Treaty by Canada and the United States in September 1964 British Columbia received \$273,291,661 in payment for Canada's entitlement to downstream power benefits under the Treaty. This sum was transferred to the Authority on 16 September 1964 and, with interest of \$22,626,121, had grown to \$295,917,782 at 31 March 1966. Of this amount \$97,914,505 had been spent on the Duncan, Arrow and Mica storage projects and \$61,000,625 had been borrowed temporarily by the Authority for other purposes. The balance remained invested by the Fiscal Agent for the Authority as follows:

Province of Quebec – 5.05% short-term notes	\$ 60,000,000
Bank of Montreal – 5.40% deposit account	26,685,000
Kinross Mortgage Corporation – 5.67% short-term notes guaranteed by Canadian Imperial Bank of Commerce....	50,000,000
Accrued interest receivable	317,652
Total	<u>\$137,002,652</u>

The rate of interest on temporary advances made after 28 February 1966 from Columbia River Treaty funds for general purposes of the Authority was increased from 5% to 5¾%.

STATEMENT OF SOURCE AND APPLICATION OF FUNDS FOR THE YEAR ENDED 31 MARCH 1966

Funds Provided

Operations:	
Net income	\$ 7,523,389
Charges against operations calling for no current outlay of cash –	
Provision for depreciation	28,840,117
Other	1,621,960
Sales of property	5,279,110
Proceeds from sales of securities:	
Parity development bonds	99,936,458
Other bonds	43,534,925
Increase in notes payable to Provincial Government	18,500,000
Interest on Columbia River Treaty funds	14,841,098
Reduction in investment of Columbia River Treaty funds	87,065,327
Reduction in working capital, etc.	21,030,571
	<u>\$328,172,955</u>

Funds Expended

Peace River Project	\$ 69,828,006
Duncan, Arrow and Mica storage projects	73,230,070
Other plant	84,399,620
Sinking fund purposes	15,064,859
Redemption of parity development bonds	85,650,400
	<u>\$328,172,955</u>

CONSTRUCTION PROGRAM

Expenditures on plant additions, land and improvements totalled \$227,457,696, compared with \$105,303,750 last year. Net property additions amounted to \$216,537,694 after deducting plant retirements of \$10,920,002. Major expenditures for the year by projects or broad classifications included the following:

Peace River Project.....	\$69,828,006
Duncan, Arrow and Mica storage projects.....	73,230,070
Burrard Thermal Generating Plant.....	6,336,669
Diesel generating stations.....	5,288,772
Hydro generating stations.....	1,509,848
Major electric transmission line construction:	
Kitimat to Terrace and Prince Rupert - 287 kv.....	8,002,346
Lower Mainland to Vancouver Island - 260 kv D.C.....	4,265,057
Kelly Lake to Savona and Bridge River - 230 kv.....	1,924,813
Savona to Valleyview and Highland Valley - 138 kv.....	1,392,363
McEwan to Morfee Lake - 138 kv.....	1,024,747
Ingledow to U.S. border - 500 kv.....	963,951
Burrard to Fraser Mills and Walters - 230 kv.....	844,077
Main trunk microwave communication system.....	4,391,823
Substations, associated distribution facilities and local transmission systems - electric.....	14,498,384
Electric extensions to serve new customers.....	15,307,365
Gas supply lines and other system improvements.....	777,129
Gas extensions to serve new customers.....	4,091,362
Buses for Vancouver and Victoria transit systems.....	2,299,182
Rail freight yard expansion, New Westminster.....	363,105

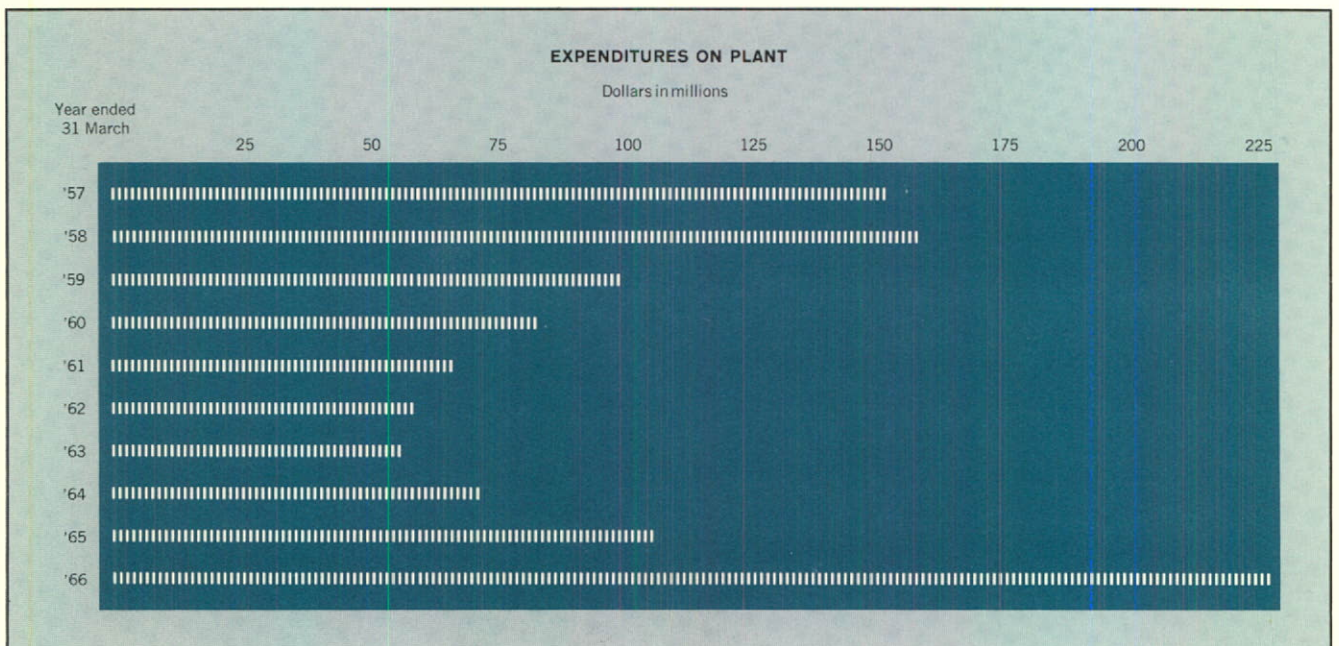
At Burrard Thermal Generating Plant a third 150,000 kw turbine generator was tested and placed in service during the year. Installation of the fourth unit - scheduled for service in 1967 - was started.

Work continued on plans for the development of electric generation and transmission facilities to meet present and future power requirements. Preliminary studies of the power potential on several northern rivers were made during the year. Further investigatory work on the foundations for a dam downstream from Portage Mountain Dam is scheduled for 1966 and 1967.

During the summer of 1965 a 230 kv transmission line from Kelly Lake to Savona (56 miles) was completed and placed in service. This line, with 32 miles of 138 kv line from Savona to Kamloops, enabled the Southern Interior system to be joined to the Authority's integrated electric system.

Construction of a second line connecting the Authority's system with that of Bonneville Power Administration was completed in July 1965. This 13.6-mile line, from Ingledow Substation to the United States border near Blaine, has been constructed for 500 kv operation but is being operated at 230 kv until after Peace River power becomes available. It provides additional security and improved opportunity for beneficial interchanges of power with other utilities of the Northwest Power Pool.

Progress was made during the year on a major project for the installation of a high voltage direct current interconnection between the Lower Mainland and Vancouver Island to meet the rapidly growing load on Vancouver Island. Contracts were let for major



equipment and construction of converter buildings is proceeding at the terminal stations. Testing of the initial circuit is scheduled to begin in April 1967.

Field work has started preparatory to construction of a 500 kv transmission line – to operate initially at 230 kv – from Williston Substation, Prince George, to Glenannan Substation in the Bulkley Valley area. This is part of the long-range program to supply the area west of Prince George with power from the Peace River system. The construction schedule will depend on load growth in this area.

Construction work was started and is well advanced on the 287 kv transmission line from the Aluminum Company of Canada's plant at Kitimat to Terrace and Prince Rupert. This line is scheduled to be completed during the winter of 1966-67; it will supplement existing generating capacity and serve new industrial loads in the Prince Rupert area.

The location of a transmission line from Terrace to Alice Arm to serve the mine of British Columbia Molybdenum Limited was under study during the year. A 138 kv line was constructed from Kennedy to Morfee Lake (27 miles) to provide service for a sawmill and townsite at Mackenzie.

A number of major improvements and extensions have been made to meet rapidly growing loads throughout the Province. A 138 kv transmission line was constructed between Topley and Houston (18.5 miles) and a 45-mile 138 kv line was completed between Smithers and Telkwa; both lines are operating initially at 25 kv. In the Quesnel area 35 miles of 60 kv transmission lines were built from Quesnel to Colebank and Hixon. In the Kootenays 11.3 miles of 60 kv lines were built between Shutty Bench and Lardeau. The construction of 64 miles of 138 kv line from Kamloops to Barriere, Vavenby and Avola provides additional energy for this fast-growing area of the Province.

Among new substations built during the year was Camosun in the Vancouver area. Additions were made to existing substations in various parts of the Province to meet load growth.

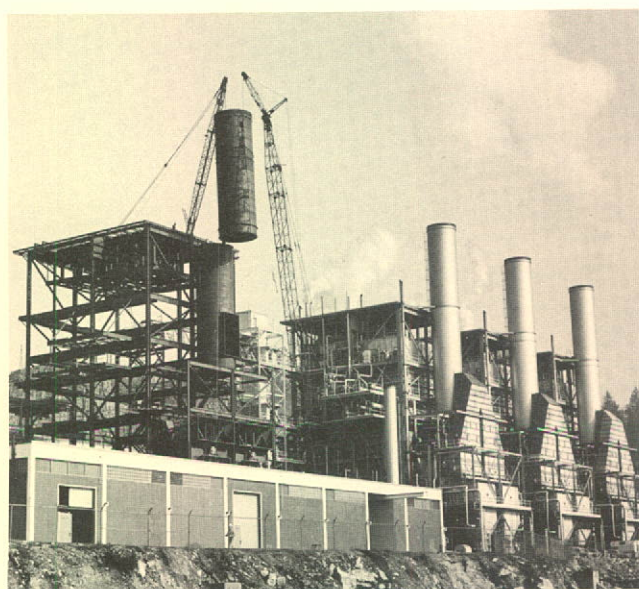
Work proceeded on the construction by contract of a main trunk microwave system, to provide communication channels for protective relaying and control of existing and future plants throughout the Province. This system will go into operation in stages, commencing in 1966.

Additions and alterations were made to diesel generating stations at Burns Lake, Chetwynd, Gold River, Hazelton, Mica Creek, Port Hardy, Smithers and Stewart.

The penstocks at the Lake Buntzen hydro plant near Vancouver were replaced during the year after 60 years of service. At the same time the concrete dam was rock-bolted and strengthened.

Major contracts awarded during the year, other than for the Peace River Project and the Duncan, Arrow and Mica storage projects, included:

The Cattermole-Trethewey Contractors Ltd.	
<i>Clearing, Kitimat-Terrace-Prince Rupert transmission line (3 contracts)</i>	\$5,608,000
Ceco Electric of Canada Limited and Commonwealth Electric Company	
<i>Construction of Section II, 287 kv transmission line, Kitimat-Prince Rupert</i>	3,465,920
Canada Wire & Cable Company Limited	
<i>Conductor for Williston-Glenannan 500 kv transmission line</i>	2,022,399



Stack for fourth 150,000 kw unit being installed at Burrard Thermal Generating Plant.



Helicopters facilitate line construction in mountainous terrain of British Columbia.



PEACE RIVER PROJECT

Expenditures on the Peace River Project to 31 March 1966 were \$147,459,931, of which \$69,828,006 was spent during the year under review. All phases of the work are proceeding close to schedule.

The contract for construction of the underground power plant at Portage Mountain was awarded in June 1965 to a joint venture headed by Northern Construction Company & J. W. Stewart Limited in the amount of \$76,987,907. This is the largest single construction contract awarded by the Authority to date. It includes construction of power intakes, penstocks, drainage tunnels, powerhouse elevator shafts, manifolds, tail-race tunnels, portal structure and related works.

After a late start in the spring because of bad weather a total of 18,469,600 cubic yards of fill were placed in the Portage Mountain dam during the construction season. Placement of fill during October 1965 totalled 3,774,880 cubic yards which is believed to be a world record for fill placement in one month. At 31 March 1966 the dam had reached a height of 240 feet above bedrock.

Work on the first 500 kv transmission line between Portage Mountain and the Vancouver area has proceeded on schedule. Orders have been placed for the design and supply of steel transmission towers to complete the line to Ingledow Substation near Vancouver. Contracts have also been awarded to supply 16.5 million feet of aluminum conductor and to construct 205 miles of this transmission line.

The peak work force for the project in 1965 was 2,568 men, an increase of 1,115 over 1964. A high level of activity is planned for the year ahead. With development well advanced and with most of the major contracts awarded, it is expected that reservoir filling will commence with the spring floods in 1968 as scheduled.

Contracts awarded during the year included orders placed with companies in Canada, France, Great Britain, Italy, Japan, Sweden and Switzerland. Major contracts were as follows:

Northern Powerplant Builders (Northern Construction Company & J. W. Stewart Limited, Morrison-Knudsen Company of Canada Ltd., Perini Pacific Limited, J. A. Jones Construction Company (Canada) Ltd.)	
Powerplant, Portage Mountain	\$76,987,907
Fischbach & Moore of Canada, Ltd.	
Construction of 205 miles of 500 kv transmission line	4,900,000
The Cattermole-Trethewey Contractors Ltd.	
Clearing transmission line right-of-way (4 contracts)	4,593,000
Canada Wire & Cable Company Limited	
Aluminum conductor for 500 kv transmission line	4,767,002
Mitsui & Co., Ltd.	
Transformers and reactors, 500 kv (2 contracts)	4,169,458
Trethewey-Wells Timber Ltd.	
Clearing transmission line right-of-way (2 contracts)	2,732,000
Associated Electrical Industries (Canada) Ltd.	
Transformers and reactors, 500 kv	2,538,924
Canadian General Electric Company Limited	
Transformers and reactors, 500 kv	2,315,313

PORTAGE MOUNTAIN DAM

Height - 600 feet. Length - 1¼ miles. Thickness - ½ mile at base. Volume - 60 million cubic yards of gravel, sand and rock.

PORTAGE MOUNTAIN POWERHOUSE

Located underground on the left bank of the river. Ultimate capacity: 2,300,000 kw.

RESERVOIR

240 miles long, covering 680 square miles. Total storage capacity: 62 million acre-feet of water.

TRANSMISSION

580 miles to southwest corner of the Province. Two lines to operate at 500,000 volts A.C.

SECOND STAGE

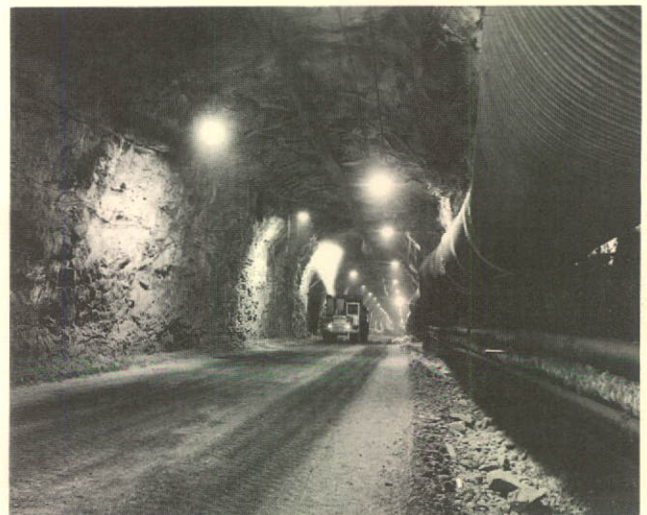
Second dam, 240 feet high, with 650,000 kw powerhouse planned for construction when needed 12 miles downstream from Portage Mountain site.

ESTIMATED PEAK LABOUR FORCE

1966 - 3,200 men. 1967 - 3,500 men. 1968 - 2,500 men.



Driller at work on left bank escarpment, high above Portage Mountain dam site.



Access tunnel to world's largest underground powerhouse, Peace River Project.

DUNCAN, ARROW AND MICA STORAGE PROJECTS

The Authority is the Canadian Entity under the terms of the Treaty between Canada and the United States relating to the development of the water resources of the Columbia River Basin, and is required to construct three storage dams – Duncan, Arrow and Mica. The total spent on the three projects to 31 March 1966 was \$97,914,505, of which \$73,230,070 was spent during the year under review.

Progress has been made by the Authority and the United States Entity appointed under the Treaty on the operating procedures required to coordinate operation of the storage reservoirs for power and flood control.

Duncan Dam

The Duncan Dam was half completed at 31 March 1966 and construction was ahead of schedule. On 7 March 1966 the Duncan River was successfully diverted through two discharge tunnels, each 20 feet in diameter and extending 1,000 feet through a bend on the right bank of the river; construction of the dam is proceeding on the dry river bed. The rate of consolidation and behaviour of the dam foundation is being carefully observed to assess the possibility of accelerating the construction schedule. Reservoir clearing is in progress in accordance with specifications issued by the Comptroller of Water Rights. The peak work force at the project during the year was 481 men.

Arrow Dam

Construction of the Arrow Dam and associated works continued on schedule during the year. The cofferdam, incorporating an unusual cut-off wall, was completed ahead of schedule and permitted an early start on the sluiceway structure. The work force totalled 890 men during the peak period of construction.

The Arrow Dam will flood about 27,000 acres of land. Clearing of the first 6,000 acres is in progress in accordance with specifications issued by the Comptroller of Water Rights. The land purchase program necessitated by the project was more than half completed at 31 March 1966.

The new water supply system installed by the Authority for the Celgar Limited mills at Castlegar was maintained during the year, despite problems with the pumping equipment. Alternative water supplies were provided for certain communities downstream from the dam site. Wells were developed at Trail, Kinnaird and near Robson and two water treatment plants were built to serve Tadanac, Warfield and Cominco Ltd.

Six contracts were awarded for the supply of gates and gantry cranes for the dam. Of these, five were awarded to Japanese suppliers.

Mica Dam

Activity at the Mica Dam site during the year was concentrated on the construction of access roads, diversion tunnels and



Duncan Project: Rock blast at ceremony marking commencement of major construction.



Arrow Project: Upstream view of the Columbia River showing completed cofferdam.



Mica Project: Diversion tunnel No. 2 under construction.

COLUMBIA RIVER TREATY DAMS			
	DUNCAN	ARROW	MICA
Height (feet)	130	170	645
Length (feet)	2,600	2,850	2,500
Volume (cubic yards in millions)	6.4	8.5	37.0
Reservoir (length in miles)	28	145	85
Live storage capacity (acre-feet in millions)	1.4	7.1	12.0
Completion date	1 April 1968	1 April 1969	1 April 1973

accommodation for the growing work force. The peak work force was 925 men.

The Provincial Department of Highways was given a contract to rebuild the 90 miles of access highway, including six major bridges, between Revelstoke and the village of Mica Creek. This work is well advanced and scheduled for completion early in 1967.

A contract was awarded during the year for construction of the two diversion tunnels, each 45 feet in diameter; the tunnels will be 3,450 feet and 3,000 feet in length respectively. At 31 March 1966 the excavation work was half completed and cofferdams at the tunnel inlets and outlets were nearing completion.

Construction of housing and associated services at Mica Creek for the project's construction crews and their families proceeded during the year. Population of the new community was 900 at the year-end and is expected to grow to 4,000 during the peak construction period in 1972.

Regional Development

The Authority's Regional Development Coordinator and staff of community planners conducted extensive studies during the year concerning the impact of the storage projects on people living in the areas affected. In the course of this work the views of residents were sought through door-to-door surveys and public meetings. The studies have resulted in a plan to develop three new communities at Burton, Fauquier and Edgewood in the Arrow Lakes region, replacing communities that will be flooded. Close attention is being given to the orderly relocation of schools, churches, community halls and cemeteries.

Contracts

Major contracts awarded during the year included:

Perini Pacific Limited and Associates
 (Perini Pacific Limited, Mannix Co. Limited,
 Northern Construction Company & J. W.
 Stewart Limited, Morrison-Knudsen
 Company of Canada Ltd.)
Diversion tunnels, Mica Dam.....\$21,062,174

Department of Highways,
 Provincial Government
*Clearing and construction of road,
 bridges and drainage between Revelstoke
 and Mica Creek*..... 13,000,000

Icanda Limited
*Construction of cofferdam cut-off wall,
 Arrow Dam*..... 4,887,525
 Dominion Bridge Company Limited
Supply of bulkhead gates, Arrow Dam..... 2,120,500

CORPORATE ORGANIZATION

By amalgamation effected on 20 August 1965 the Authority acquired all the rights, powers and assets, and, subject to the Power Measures Act, 1964, assumed all the obligations of British Columbia Electric Company Limited and British Columbia Power Commission which ceased to exist as separate corporations.

On 28 February 1966 the Authority made an offer to the shareholders of East Kootenay Power Company, Limited to purchase all the common and preference shares of that company. The offer was subsequently accepted by a sufficient number of shareholders to enable all the shares to be acquired and the Authority expects to complete the purchase during 1966.

EMPLOYEES

The Authority had a staff of 6,250 regular employees at 31 March 1966, up 244 or 4.1% from last year. The increase in employee recruitment is well below the rate of expansion in construction and operations activity. In the year ended 31 March 1966 expenditures on plant increased by 116.0% and kilowatt-hour sales of electricity by 15.8%.

Labour agreements were concluded during the year with the Amalgamated Transit Union (Pacific Stage Lines), the Brotherhood of Locomotive Engineers, the Order of Railway Conductors and Brakemen and the Office and Technical Employees' Union. In spite of protracted negotiations the Authority and the International Brotherhood of Electrical Workers were unable to agree on the terms of a new contract and, for the first time in the history of the Authority, it was necessary to obtain a binding award from a conciliation board. The award established working conditions to 31 March 1968, granted wage increases totalling 19% over the three-year period and reduced the work week from 40 hours to 37½ hours effective 1 June 1967. At the year-end a union demand for premium pay for line construction work undertaken with helicopters was under arbitration.

The Authority's new pension plan received final approval during the year and is available to all employees retiring after 1 January 1965. It is fully integrated with the Canada Pension Plan and provides for equal contributions by employer and employee. It is designed to produce, for those employees who qualify, a retirement income of approximately 2% of average annual earnings during the last 10 years of service, for each year of service not exceeding 35 years. There is a specified maximum income which an employee may receive under the

Authority's pension plans, the Canada Pension Plan, the Old Age Security Act and any general public plan for the provision of a regular income. New employees must join the plan; other employees may elect, before 1 April 1967, to join the plan or may remain members of the plans in which they are currently enrolled.

Eighty-nine employees retired on pension during the year, twenty more than last year. Fourteen had more than 40 years' service; of these the following had served for over 45 years:

- E. A. KNIGHT, *Power Dispatcher*
50 years, 7 months
- D. SMITH, *Transit Operator*
47 years, 6 months
- W. A. VANCE, *General Freight Agent*
47 years, 2 months
- J. DELANY, *Accountant*
46 years, 10 months

The Directors wish to record their sincere appreciation of the contribution made by members of the staff to the substantial progress achieved during the year.



Edward A. Knight, Power Dispatcher - 50 years' service.

OUTLOOK

The Authority serves areas of British Columbia containing more than 90% of the population, and is therefore directly influenced by and contributes significantly to the economic growth of the Province.

In the two years since the "Two River" policy of the Government of British Columbia became a reality - with construction proceeding rapidly on the Peace River and Columbia River projects - the Provincial economy has expanded at a remarkable rate. Attracted by British Columbia's abundant natural resources, strategic location and the prospect of unlimited electrical energy, and stimulated by the rising world demand for the products of British Columbia's forests, mines and oil and natural gas wells, industries have hastened to expand and to establish themselves in the Province.

Every measure of economic activity bears witness to the current high level of expansion and to the foundation being built

for further growth in the future. In 1965 the population of the Province increased by 67,000 or 3.8%, compared with an average population increase of 1.8% in Canada as a whole. Of this total, 48,000 moved to British Columbia from other provinces or countries. In the same period pulp production increased by 14% and paper production by 11%, exports originating in the Province rose by 9%, retail trade increased by over 8% and unemployment declined to an average of 4.2% of the labour force.

It is apparent that in certain fields the resources of industry are approaching full employment and shortages are developing in skilled labour and production facilities. Unless an effort is made in the short term to defer unessential expenditures, costs of the essential elements of capital expansion - money, manpower and material - will rise at an increasing rate.

In the longer term the outlook is for continuing expansion at the maximum rate the Province's resources will allow. No slackening is visible in world demand for British Columbia's products - the reverse is to be expected. Publicly announced pulp mills, under construction or planned, will require an investment of \$976 million. In the next five years annual capacity for pulp production is expected to reach 5,322,000 tons, 156% over the capacity at the end of 1965. In the same period newsprint production will reach an estimated 2,800,000 tons, up 104%.

During the year the Authority negotiated contracts with large industrial consumers for 88,000 kilowatts of bulk power at transmission voltages. Final negotiations are in progress for another 303,000 kilowatts of such power, and preliminary negotiations have begun for a further 162,000 kilowatts. It is expected that in the next five years sales to bulk power customers will increase to more than double the levels prevailing in 1965-66.

The Authority plans continuously to meet the long-term power needs of British Columbia. The development of the Peace and Columbia Rivers will provide an ultimate combined capacity of about 7½ million kilowatts, more than 3½ times the Authority's total generating capacity at 31 March 1966. Further hydro-electric projects are being planned and will be undertaken when needed in the future.

With its vast power and other resources, rapidly growing population and ready access to world markets, British Columbia's prospects for continuing prosperity appear virtually unlimited.

FINANCIAL STATEMENTS

The Balance Sheet and the Statement of Net Income are attached. The statements have been examined by Price Waterhouse & Co., the auditors appointed by the Lieutenant-Governor in Council, and the report of the auditors is also attached.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

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 1966 and the related statement of net income for the year ended on that date. 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, the accompanying balance sheet and the related statement of net income present fairly the combined financial position of the Authority as at 31 March 1966 and the results of its combined operations for the year ended on that date, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Vancouver, B.C.
27 May 1966

PRICE WATERHOUSE & CO.,
Chartered Accountants.
Auditors.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

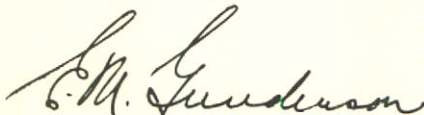
STATEMENT OF NET INCOME FOR THE YEAR ENDED 31 MARCH 1966 (Note 1)
(with corresponding figures for the year ended 31 March 1965)

	1966	1965
Gross revenues.....	<u>\$160,777,546</u>	<u>\$153,307,283</u>
Expenses:		
Salaries, wages and employee benefits.....	36,702,973	32,916,747
Materials and services.....	32,510,332	26,974,881
Grants, school taxes, etc.....	10,556,265	9,850,489
Provision for depreciation.....	28,840,117	27,131,754
Interest and other costs on debt (Note 5).....	\$50,697,970	\$47,729,887
Less -		
Interest charged to construction.....	<u>6,053,500</u>	<u>4,458,997</u>
	<u>153,254,157</u>	<u>140,144,761</u>
Net income, transferred to stabilization of rates and contingency reserve (Note 8).....	<u>\$ 7,523,389</u>	<u>\$ 13,162,522</u>

BALANCE SHEET AS AT 31 MARCH 1966 (Note 1)
 (with corresponding figures as at 31 March 1965)

	1966	1965
PROPERTY ACCOUNT:		
Lands, franchises, water rights, plants for the generation, transmission and distribution of electricity and gas, trolley coaches, motor buses, freight railway and rolling stock, etc., at cost.....	\$1,197,581,780	\$1,126,802,162
Less -		
Accumulated depreciation.....	241,707,772	218,218,360
	<u>955,874,008</u>	<u>908,583,802</u>
Unfinished construction -		
Peace River Project.....	147,459,931	77,631,925
Duncan, Arrow and Mica storage projects (Note 7).....	97,914,505	24,684,435
Other.....	29,300,000	26,600,000
	<u>1,230,548,444</u>	<u>1,037,500,162</u>
CURRENT AND WORKING ASSETS:		
Cash.....	3,630,810	1,931,487
Temporary investments.....	3,949,569	7,750,889
Accounts receivable and unbilled revenues.....	21,251,122	17,953,712
Materials and supplies at average cost.....	7,523,566	6,470,029
Prepaid expenses.....	392,900	463,983
	<u>36,747,967</u>	<u>34,570,100</u>
COLUMBIA RIVER TREATY FUNDS (Note 7).....	137,002,652	224,067,979
MORTGAGES AND OTHER DEFERRED ACCOUNTS RECEIVABLE.....	4,089,756	4,135,032
DEFERRED CHARGES:		
Unamortized discount and expense on long-term debt and parity development bonds.....	17,765,381	17,700,670
Other.....	114,625	117,848
	<u>17,880,006</u>	<u>17,818,518</u>
	<u>\$1,426,268,825</u>	<u>\$1,318,091,791</u>

APPROVED ON BEHALF OF THE BOARD:



E. M. GUNDERSON, Director



F. A. SMITH, Director

	1966	1965
LONG-TERM DEBT (Notes 2 and 3).....	<u>\$ 745,802,756</u>	<u>\$ 739,908,956</u>
PARITY DEVELOPMENT BONDS, payable on demand (Note 3):		
Issued by British Columbia Hydro and Power Authority -		
5% Series E due 15 August 1967.....	50,505,000	50,505,000
5% Series K due 3 August 1968.....	50,505,000	50,505,000
5% Series P due 1 September 1969.....	50,505,000	—
5% Series R due 1 September 1970.....	50,505,000	—
Issued by the former British Columbia Electric Company Limited -		
5½% Series A redeemed 1 September 1965.....	—	85,650,400
	<u>202,020,000</u>	<u>186,660,400</u>
NOTES PAYABLE, held by the Province of British Columbia (Note 4).....	<u>18,500,000</u>	<u>—</u>
CURRENT AND ACCRUED LIABILITIES:		
Accounts payable.....	53,147,030	31,134,051
Taxes on income (Note 6).....	—	3,737,587
Interest accrued on long-term debt, parity development bonds and notes payable.....	12,040,431	11,556,380
Long-term debt payments due within one year -		
Sinking fund instalments.....	12,386,690	12,567,872
Debt maturity.....	23,574,000	—
	<u>101,148,151</u>	<u>58,995,890</u>
COLUMBIA RIVER TREATY OBLIGATION (Note 7):		
Amount received to construct and operate Duncan, Arrow and Mica storage projects.....	273,291,661	273,291,661
Interest.....	22,626,121	7,785,023
	<u>295,917,782</u>	<u>281,076,684</u>
CONTRIBUTIONS IN AID OF CONSTRUCTION.....	<u>8,784,010</u>	<u>7,516,200</u>
STABILIZATION OF RATES AND CONTINGENCY RESERVE (Note 8).....	54,096,126	43,933,661
	<u>\$1,426,268,825</u>	<u>\$1,318,091,791</u>
COMMITMENTS (Note 10)		

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

NOTES TO FINANCIAL STATEMENTS AS AT 31 MARCH 1966

Note 1 – Financial statements:

As in the previous year, the accompanying financial statements as at 31 March 1966 present the combined financial position and results of operations of the whole undertaking of British Columbia Hydro and Power Authority (the Authority) and the former British Columbia Electric Company Limited (the Electric Company) and British Columbia Power Commission (the Commission). Pursuant to enabling statutes, the Electric Company and the Commission were amalgamated with the Authority on 20 August 1965 and ceased to exist as separate corporations from that date.

Note 2 – Long-term debt:

Issued by British Columbia Hydro and Power Authority –

Bonds:

	1966	1965
5¼% Series A due 1 May 1982	\$ 32,496,300	\$ 32,496,300
3¼% Series B due 1 October 1979	10,000,000	10,000,000
5% Series C due 1 March 1993	15,000,000	15,000,000
5¼% Series D due 1 May 1993	25,000,000	25,000,000
5¼% Series F due 1 June 1993	10,000,000	10,000,000
5¼% Series G due 15 October 1993	15,000,000	15,000,000
5¼% Series H due 15 December 1993	10,000,000	10,000,000
5¼% Series J due 1 March 1994	10,000,000	10,000,000
5¼% Series L due 2 July 1994	10,000,000	10,000,000
5¼% Series M due 15 December 1994	20,000,000	20,000,000
5¼% Series N due 15 March 1995	10,000,000	10,000,000
5¾% Series S due 15 September 1995	10,000,000	—
5½% Series T due 29 December 1995	29,000,000	—
5.29% Series V-A due 2 March 1986	5,085,000	—

Issued by the former British Columbia Electric Company Limited –

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

3¼% Series "A" due 2 January 1967	23,574,000	24,204,000
3¼% Series "B" due 1 October 1967	7,340,000	7,527,000
3¾% Series "C" due 1 April 1968	12,766,000	13,097,000
3¾% Series "D" due 1 February 1969	12,700,000	13,037,000
3½% Series "E" due 1 March 1975	15,047,000	15,468,000
4% Series "F" due 1 July 1991	2,895,000	2,976,000
3¾% Series "G" due 1 December 1976	16,228,000*	16,566,000*
4¾% Series "H" due 1 December 1977	12,224,000	12,510,000
4¾% Series "I" due 1 February 1979	12,482,000	12,761,000
3¾% Series "J" due 1 June 1980	12,831,000	13,095,000
4¼% Series "K" due 1 February 1981	25,806,000	26,336,000
5% Series "L" due 1 February 1982	35,239,000	35,888,000
5⅛% Series "M" due 2 January 1988	44,884,000	45,652,000
5½% Series "N" due 1 March 1989	27,453,000	27,870,000
6½% Series "O" due 1 April 1990	28,292,000	28,678,000
5¾% Series "P" due 1 May 1991	14,347,000	14,524,500

Perpetual Callable Bonds:

4%	466,000	527,800
4¼%	140,200	153,450
4½%	282,950	320,300
4¾%	761,650	859,250
5%	657,900	738,400
5½%	433,050	473,700
carried forward	\$518,431,050	\$480,758,700

Note 2 – Long-term debt (continued):

	1966	1965
brought forward.....	\$518,431,050	\$480,758,700
25-year Callable Bonds due 1 August 1986:		
4% Series AA.....	11,534,000	11,472,200
4¼% Series AB.....	10,859,800	10,846,550
4½% Series AC.....	14,717,050	14,679,700
4¾% Series AD.....	25,651,750	25,554,150
5% Series AE.....	24,342,100	24,261,600
5½% Series AF.....	14,566,950	14,526,300
Sinking Fund Debentures:		
5¾% Series A due 1 April 1977, after deducting debentures redeemed in accordance with sinking fund requirements.....	36,800,000	37,200,000
Issued by the former British Columbia Power Commission –		
Bonds:		
3% Series A due 1 October 1967.....	7,000,000	7,000,000
3% Series B due 1 November 1968.....	6,000,000	6,000,000
3¾% Series C due 15 September 1991.....	3,000,000	3,000,000
4% Series D due 21 May 1992.....	1,000,000	1,000,000
4% Series E due 15 June 1992.....	1,000,000	1,000,000
4% Series F due 15 September 1992.....	1,500,000	1,500,000
4% Series G due 1 November 1988.....	10,000,000*	10,000,000*
3¼% Series H due 15 July 1989.....	6,300,000*	6,300,000*
3¼% Series J due 4 July 1975.....	10,000,000	10,000,000
5% Series MC due 15 September 1982.....	5,149,000	5,149,000
5% Series MD due 15 September 1992.....	18,724,000	18,724,000
5% Series N due 15 September 1992.....	10,000,000	10,000,000
3% Series S due 1 April 1976.....	17,738,000	17,738,000
3½% Series T due 1 April 1977 (payable in Canadian or United States funds at option of holder).....	9,285,000	9,285,000
Debentures:		
3¾% Series K due 15 June 1986.....	20,000,000*	20,000,000*
4¾% Series L due 15 April 1987.....	25,000,000*	25,000,000*
3¾% Series P due 1 February 1988.....	20,000,000*	20,000,000*
	<u>828,598,700</u>	<u>790,995,200</u>
Less –		
Exchange discount incurred on long-term debt payable in United States funds.....	2,553,040	2,554,614
	<u>826,045,660</u>	<u>788,440,586</u>
Less –		
Sinking funds on deposit with Trustee, Minister of Finance for the Province of British Columbia.....	44,282,214	35,963,758
	<u>\$781,763,446</u>	<u>\$752,476,828</u>
Classification on balance sheet –		
Long-term debt.....	\$745,802,756	\$739,908,956
Long-term debt payments due within one year, included in current and accrued liabilities:		
Sinking fund instalments.....	12,386,690	12,567,872
Debt maturity.....	23,574,000	—
	<u>\$781,763,446</u>	<u>\$752,476,828</u>

*Payable in United States funds and carried at par of exchange.

NOTES TO FINANCIAL STATEMENTS AS AT 31 MARCH 1966 (continued)

Note 3 – 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 4 – Notes payable:

The notes payable were repaid in April 1966 from the proceeds of an issue of \$40,000,000 5¾% Series U bonds due 18 April 1991.

Note 5 – Interest:

Included in interest and other costs on debt is \$1,621,960 for amortization of discount and expense on long-term debt and parity development bonds, and a deduction of \$1,922,343 for income from sinking fund investments.

Note 6 – Taxes on income:

Final assessments for taxes on income payable by British Columbia Electric Company Limited and its subsidiary companies were received and settled during the year in the amount of \$1,098,511. The unrequired balance of the provision for taxes on income, amounting to \$2,639,076, has been added to Stabilization of Rates and Contingency Reserve.

Note 7 – Columbia River Treaty:

The Authority is the Canadian entity for purposes of the Columbia River Treaty between Canada and the United States and is required to construct three storage dams – Duncan, Arrow and Mica. Canada's entitlement to half the increased power generation in the United States resulting from the construction of the three dams was sold to the Columbia Storage Power Exchange for periods of 30 years from the scheduled dates of completion of the respective dams. As a result of this sale, the Government of British Columbia received the sum of \$273,291,661. This amount was transferred to the Authority on 16 September 1964 and, with interest in the amount of \$22,626,121, had increased to \$295,917,782 as at 31 March 1966. This sum has been applied as follows:

Investments and accrued interest:

Province of Quebec 5.05% notes maturing at various dates to 15 October 1968	\$ 60,000,000
Bank of Montreal special fixed deposits at 5.40% maturing at various dates to 16 September 1968	26,685,000
Kinross Mortgage Corporation 5.67% notes maturing at various dates to 18 September 1967 – guaranteed by Canadian Imperial Bank of Commerce	50,000,000
Accrued interest receivable	317,652
	<u>137,002,652</u>

Funds temporarily advanced to the Authority for general purposes,

with interest at 5% on advances to 28 February 1966 and 5¾% on subsequent advances	61,000,625
	<u>198,003,277</u>

Expenditures on Duncan, Arrow and Mica storage projects to 31 March 1966,
including interest during construction

	97,914,505
	<u>\$295,917,782</u>

As operation of the storages is commenced, in accordance with the terms of the Treaty, amounts aggregating \$64,400,000 (United States dollars) will be receivable by the Government of British Columbia for providing flood control. If these storages are not completed so as to be fully operative within agreed dates, the Authority is liable, under certain covenants, to make compensation to the Columbia Storage Power Exchange. The Authority also has certain obligations relating to the operation and maintenance of these storage projects.

Note 8 – Stabilization of rates and contingency reserve:

Balance as at 31 March 1965.....		\$43,933,661
<i>Add –</i>		
Balance of provision for taxes on income no longer required (Note 6).....	\$2,639,076	
Net income for the year ended 31 March 1966.....	<u>7,523,389</u>	<u>10,162,465</u>
Balance as at 31 March 1966.....		<u>\$54,096,126</u>

Note 9 – Pension plans:

A new pension plan was introduced by the Authority effective 1 January 1965. Employees may elect to transfer from existing plans to the new plan and a survey is being conducted to determine how many employees will transfer to the new plan and the additional cost involved. The amount of this cost is not known at the present time.

Note 10 – Commitments:

- (a) In addition to the general commitment to construct the three storage dams on the Columbia River (referred to in Note 7), in respect of which the uncompleted portions of contracts entered into as at 31 March 1966 amounted to a total of \$88,000,000, other commitments and contracts of the Authority for capital projects and inventories of materials and supplies aggregated approximately \$228,000,000 as at 31 March 1966.
- (b) On 28 February 1966 the Authority made an offer to the shareholders of East Kootenay Power Company, Limited to purchase all the common and preference shares of that company at an aggregate price of \$3,400,275. The offer was subsequently accepted by a sufficient number of shareholders to enable all the shares to be acquired and the Authority expects to complete the purchase during 1966.

FINANCIAL STATISTICS

(in millions of dollars)

	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957
SOURCES OF REVENUE										
Electric – residential.....	38.1	40.6	38.5	37.4	40.0	38.2	36.4	33.0	28.7	26.3
– other.....	66.8	60.4	54.8	55.1	50.3	46.6	44.1	39.1	33.1	29.0
Gas.....	31.2	30.0	25.7	24.6	22.5	19.7	17.0	12.2	8.1	5.9
Passenger transportation.....	16.9	14.5	13.8	13.9	13.4	13.9	14.6	14.3	13.9	13.7
Rail freight.....	6.2	5.9	5.6	5.3	5.0	4.8	4.9	5.1	4.9	5.2
Miscellaneous.....	1.6	1.9	1.2	1.4	2.1	3.0	2.2	1.8	2.3	1.5
Total.....	160.8	153.3	139.6	137.7	133.3	126.2	119.2	105.5	91.0	81.6
DISPOSITION OF REVENUE										
Employment costs, materials and services.....	69.2	59.9	54.5	51.7	47.9	46.1	45.6	40.4	39.0	35.1
Grants, school taxes, etc.....	10.6	9.9	9.1	8.4	7.1	6.8	6.2	5.5	4.6	3.9
Provision for depreciation.....	28.8	27.1	25.3	22.8	21.8	20.7	18.9	17.0	13.6	11.1
Taxes on income.....	—	—	—	—	2.8	12.0	11.8	9.2	7.6	9.3
Interest and other costs on debt.....	50.7	47.7	44.7	43.5	35.8	28.4	25.0	21.7	17.8	11.1
Interest charged to construction (deduct).....	(6.0)	(4.5)	(2.8)	(2.7)	(3.3)	(3.1)	(4.7)	(4.9)	(4.6)	(3.5)
Dividends on preferred shares.....	—	—	—	—	1.7	5.0	5.0	5.0	4.4	3.8
Dividends on common shares.....	—	—	—	—	1.9	8.1	7.2	6.3	5.8	5.3
Employed in the business.....	7.5	13.2	8.8	14.0	17.6	2.2	4.2	5.3	2.8	5.5
Total.....	160.8	153.3	139.6	137.7	133.3	126.2	119.2	105.5	91.0	81.6
EXPENDITURES ON PLANT.....										
	227.5	105.3	70.6	54.2	57.1	64.3	81.0	98.8	157.1	151.3

NOTE: Statistics are for years ended 31 March except 1962 (1 April 1961 to 29 March 1962) and 1963 (30 March 1962 to 31 March 1963). For years prior to 30 March 1962, statistics of the former British Columbia Electric Company Limited and the former British Columbia Power Commission have been combined.

OPERATING STATISTICS

	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957
ELECTRIC										
Generating capacity at year-end (rated kw in thousands) (1)										
Hydro.....	1,306	1,306	1,295	1,295	1,295	1,296	1,172	1,023	987	799
Thermal.....	738	588	571	570	268	268	253	110	84	57
Total.....	2,044	1,894	1,866	1,865	1,563	1,564	1,425	1,133	1,071	856
Peak one-hour demand, integrated system (kw in thousands).....	1,686	1,490	1,244	1,169	1,154	1,083	1,064	1,020	885	815
Customers at year-end (in thousands).....	529	503	478	459	443	432	420	403	385	366
Electricity sold to public (kwh)										
Total (in millions).....	8,506	7,345	6,431	6,059	5,540	5,149	4,934	4,471	3,769	3,261
Increase over previous year (%).....	15.8	14.2	6.1	9.4	7.6	4.4	10.4	18.6	15.6	9.3
By class of customer (%)										
Residential.....	30	31	32	32	33	33	33	33	36	38
Other systems (largely residential).....	1	2	2	2	1	2	2	2	2	2
Commercial, industrial, etc.....	69	67	66	66	66	65	65	65	62	60
Residential service										
Average annual kwh use per customer.....	5,650	5,486	5,200	5,029	4,829	4,723	4,658	4,455	4,240	4,092
Average revenue per kwh (cents).....	1.5	1.8	1.8	1.9	2.2	2.2	2.2	2.2	2.1	2.1
(1) Excludes electricity available from other systems. Rated capacity has been exceeded on occasion.										
GAS										
One-day capacity at year-end (therms in thousands)										
Mainland - firm pipeline contracts (2).....	2,020	1,900	1,780	1,780	1,780	1,540	1,000	575	575	400
- plant.....	250	250	250	250	250	320	320	190	190	160
Greater Victoria - plant.....	36	36	36	36	36	27	27	27	27	18
Peak one-day demand (therms in thousands)										
Mainland system - including interruptible.....	2,593	2,341	1,359	1,580	1,287	934	828	728	330	185
- excluding interruptible.....	1,493	1,849	1,060	1,342	1,081	733	690	663	288	180
Greater Victoria system.....	17	23	16	18	21	13	16	15	13	14
Customers at year-end (in thousands).....	161	153	145	137	129	120	111	96	79	63
Gas sold to public (therms)										
Total (in millions).....	322	306	260	240	217	186	157	103	62	30
Increase over previous year (%).....	5.3	17.7	8.6	10.4	16.7	18.5	52.1	66.4	105.5	43.0
Average revenue per therm (cents).....	9.7	9.8	9.9	10.3	10.2	10.6	10.8	11.8	13.0	19.4
(2) On basis of 100 cu. ft. to one therm.										
PASSENGER TRANSPORTATION										
Vehicles at year-end										
Urban - buses.....	325	336	339	334	332	342	341	346	340	323
- trolley coaches.....	296	296	312	317	327	327	351	351	351	351
- total.....	621	632	651	651	659	669	692	697	691	674
Interurban rail passenger cars.....	—	—	—	—	—	—	—	—	—	11
Interurban buses.....	61	70	80	81	75	71	67	69	69	69
Passengers carried (in millions)										
Urban.....	70.7	73.1	75.8	77.3	78.3	82.4	89.3	98.4	102.9	100.9
Interurban rail.....	—	—	—	—	—	—	—	—	.8	1.0
Interurban bus.....	2.0	2.0	2.3	2.5	2.5	2.6	2.7	3.1	3.3	3.4
Revenue miles run - urban (in millions).....	20.4	20.5	20.5	20.5	20.6	21.7	22.6	23.6	23.3	23.1
Passenger revenue per mile - urban (cents).....	68.4	57.7	52.8	54.0	54.2	54.3	56.5	52.4	51.1	50.5
RAIL FREIGHT (tons in thousands).....	1,971	1,832	1,663	1,567	1,527	1,427	1,359	1,276	1,314	1,617
EMPLOYEES AT YEAR-END										
Regular.....	6,250	6,006	5,761	5,641	5,804	5,919	6,053	6,263	6,538	not available
Temporary.....	647	418	451	328	292	323	340	487	802	
Total.....	6,897	6,424	6,212	5,969	6,096	6,242	6,393	6,750	7,340	6,933

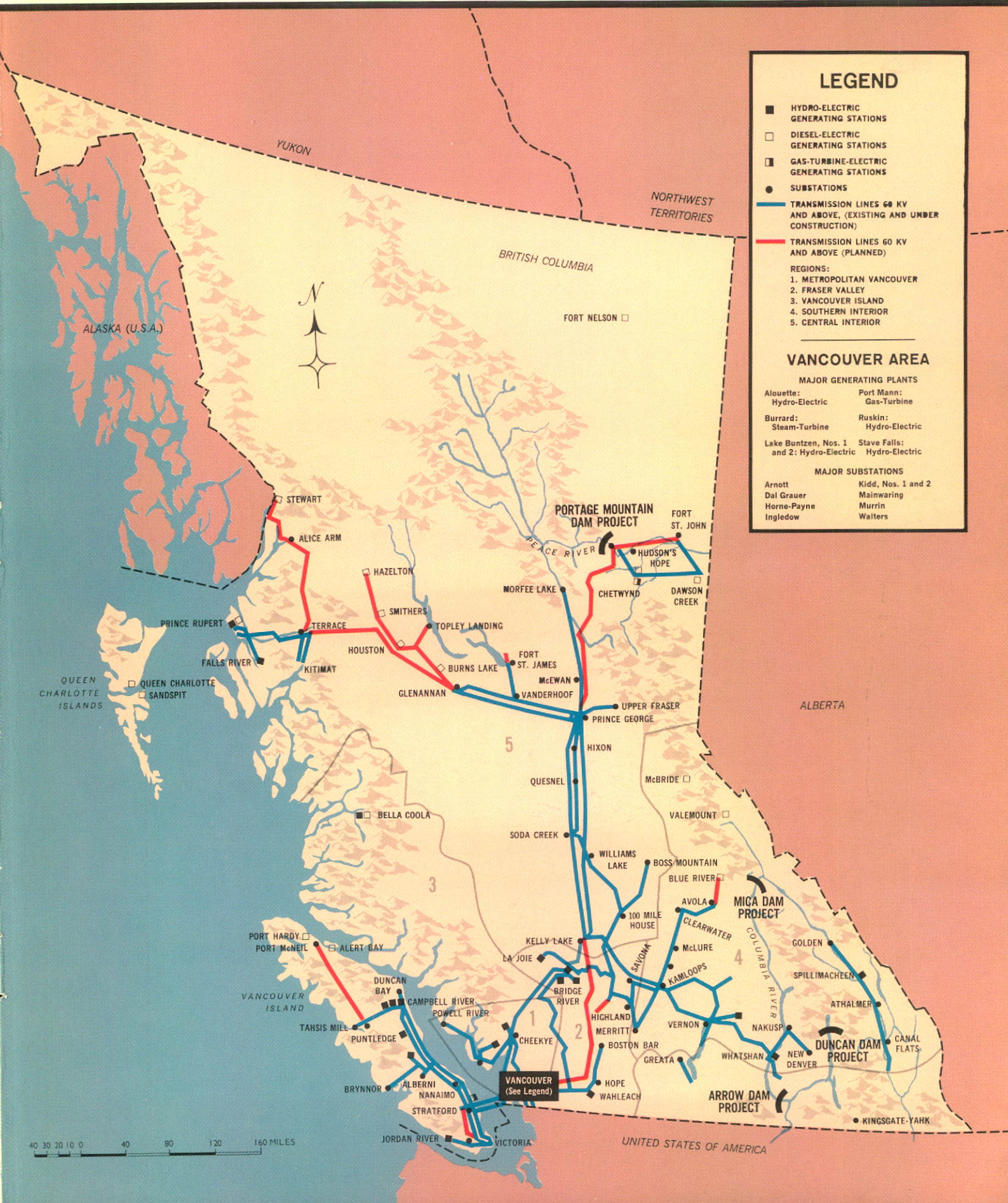
NOTE: Statistics are for years ended 31 March except 1962 (1 April 1961 to 29 March 1962) and 1963 (30 March 1962 to 31 March 1963). For years prior to 30 March 1962, statistics of the former British Columbia Electric Company Limited and the former British Columbia Power Commission have been combined.

BRITISH COLUMBIA CELEBRATES ITS CENTENARY THIS YEAR. On 19 November 1866 the crown colonies of Vancouver Island and British Columbia were united and the Colony of British Columbia was proclaimed. British Columbia Hydro and Power Authority had its beginnings six years earlier. On 29 November 1860 its first predecessor, Victoria Gas Company Limited, was incorporated and soon afterwards granted a charter to “establish Gas Works and buildings, and lay not less than 5000 feet of Mains of an adequate diameter, and supply therefrom gas of good quality, at the house, shop, establishment or the residence of the person requiring same”. Today Victoria Gas Company Limited remains the oldest provincially incorporated company in British Columbia and the gas mains of the Authority extend for more than three thousand miles, serving the houses, shops, establishments or residences of 161,000 persons in Greater Victoria and on the Lower Mainland of the former colony.



Cook with gas – then and now “the up-to-date way”. Float entered by Victoria Gas Company in a May 24th parade at the turn of the century.

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY ELECTRIC TRANSMISSION SYSTEM 1966 - WITH PLANNED ADDITIONS



LEGEND

- HYDRO-ELECTRIC GENERATING STATIONS
- DIESEL-ELECTRIC GENERATING STATIONS
- ▣ GAS-TURBINE-ELECTRIC GENERATING STATIONS
- SUBSTATIONS
- TRANSMISSION LINES 60 KV AND ABOVE, (EXISTING AND UNDER CONSTRUCTION)
- TRANSMISSION LINES 60 KV AND ABOVE, (PLANNED)

- REGIONS:
1. METROPOLITAN VANCOUVER
 2. FRASER VALLEY
 3. VANCOUVER ISLAND
 4. SOUTHERN INTERIOR
 5. CENTRAL INTERIOR

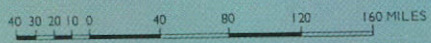
VANCOUVER AREA

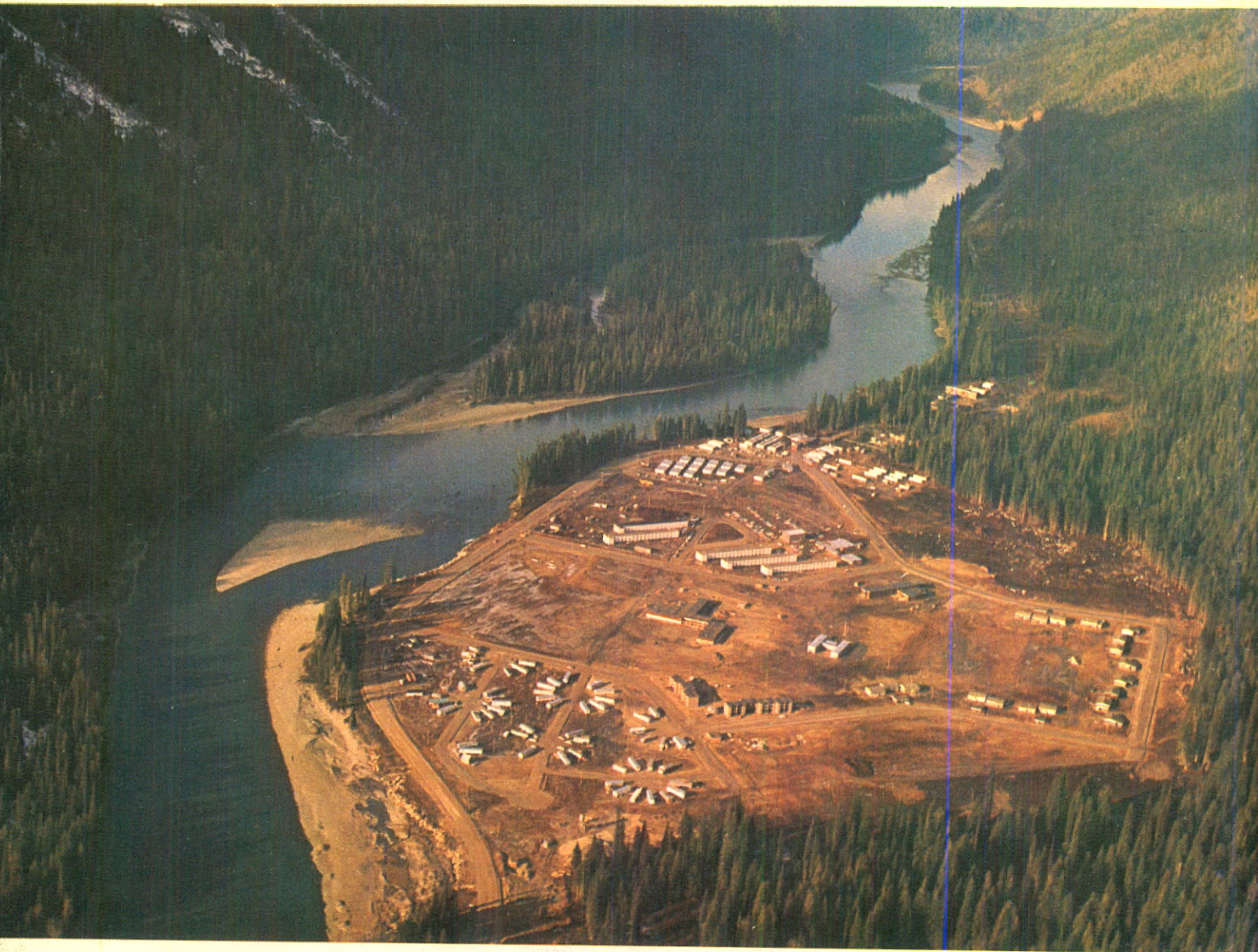
MAJOR GENERATING PLANTS

- | | |
|---|--------------------------------|
| Alouette:
Hydro-Electric | Port Mann:
Gas-Turbine |
| Burrard:
Steam-Turbine | Ruskin:
Hydro-Electric |
| Lake Buntzen, Nos. 1
and 2: Hydro-Electric | Stave Falls:
Hydro-Electric |

MAJOR SUBSTATIONS

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





The new village of Mica Creek on the Columbia River will house Mica Dam construction workers and their families.