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THIRD ANNUAL REPORT  
Year ended 31 March 1965



BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

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## **BRITISH COLUMBIA HYDRO AND POWER AUTHORITY**

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

### **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.



THE PRIME MINISTER

VICTORIA

1 9 6 5

June 16th

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, 1965.

Prime Minister

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# 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  
*\*Member of the Executive Management Committee*  
  
GEOFFREY G. WOODWARD *Secretary*  
MRS. P. ROSS KIDD *Assistant Secretary*

## SENIOR MANAGEMENT

PHILIP W. BARCHARD *Division Manager – Operations*  
*19 years' service*  
WILLIAM H. Q. CAMERON *General Solicitor and Division Manager – Legal*  
*18 years' service*  
JOHN J. CARSON *Division Manager – Staff Services*  
*9 years' service*  
*(on leave of absence to the Government of Canada)*  
THOMAS CHAMBERS *Comptroller and Chief Financial Officer*  
*19 years' service*  
HUGH A. ELLIOTT *Division Manager – Commercial Services*  
*29 years' service*  
G. FREDERIC GREEN *Division Manager – Production*  
*28 years' service*  
GARTH GRIFFITHS *Acting Division Manager – Staff Services*  
*19 years' service*  
ROBERT W. GROSS *Division Manager – Land*  
*19 years' service*  
W. DENIS KENNEDY *Division Manager – Major Resources*  
*5 years' service*  
J. STUART LANG *Internal Auditor*  
*19 years' service*  
ROBERT C. McMORDIE *Columbia Projects Manager*  
*9 years' service*  
J. PETER OTTESEN *Construction Manager – Major Hydro Projects*  
*1 year's service*  
JOHN S. PURVES *Division Manager – Purchasing and Stores*  
*36 years' service*  
SIGURDUR SIGMUNDSON *Division Manager – Transportation*  
*20 years' service*  
JOHN H. STEEDE *Chief Engineer and Division Manager – Engineering*  
*40 years' service*  
  
*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, Parity Development Bonds: THE AUTHORITY*  
*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*

# BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

OFFICE OF THE CHAIRMAN

970 BURRARD STREET

VANCOUVER 1, B. C.

14 June 1965

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

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 1965.

The year was one of notable activity, progress and achievement in keeping with and contributing to the dynamic growth of the provincial economy. Of prime importance were the ratification, on 16 September 1964, of the Treaty between Canada and the United States of America governing the cooperative development of the water resources of the Columbia River Basin, and the designation of the Authority as the Canadian Entity under the terms of the Treaty.

The Peace River Project continued to make excellent progress during the year. A single-belt conveyor system, believed to be the longest in the world, was brought into operation in July 1964. This system carries fill material at the rate of 12,000 tons an hour to the site of the Portage Mountain Dam. All major contracts awarded to date have been well within the estimates prepared for the British Columbia Energy Board in 1961.

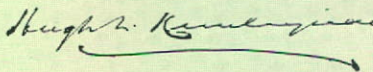
The fourth successive annual rate reduction since the formation of the Authority in 1962 was announced on 30 March 1965; it will save consumers \$7.1 million a year. These reductions have saved the customers of the Authority \$30 million in the past three years and savings will continue at a rate of more than \$20 million annually.

There was a marked increase in the demand for electricity during the year. Kilowatt-hours sold rose by 14.2% over the previous year, compared with an average annual increase of 7.6% in the five preceding years.

Of particular interest was the Authority's purchase, in November 1964, of Northern British Columbia Power Company Limited, serving the City of Prince Rupert, the Village of Stewart and their neighbouring areas. Ample power for the expansion of industry in this important maritime region of the Province is now assured.

The Authority looks forward to the future with confidence and determination that abundant supplies of power will be provided to meet the fast-growing requirements of British Columbia, and that the cost of service will be increasingly favourable to the consumer.

Respectfully submitted,



CHAIRMAN



CHAIRMAN

## THE YEAR IN BRIEF

*Ratifications of the Columbia River Treaty were exchanged by the Governments of Canada and the United States.*

*British Columbia received \$273,291,661 in payment for Canada's entitlement to downstream power benefits under the Columbia River Treaty.*

*Construction of the Columbia River Treaty projects was begun; total expenditure to 31 March 1965 was \$24,684,435.*

*Work progressed on the 2,300,000 kw Peace River Project; total expenditure to 31 March 1965 was \$77,631,925.*

*Electric rates were reduced by approximately \$7.1 million a year, effective April 1965; reductions in electric and gas rates since March 1962 now exceed \$20 million annually.*

*Urban transportation fares in Vancouver, Victoria and neighbouring areas were raised to produce estimated additional revenue of \$1.9 million a year effective January 1965.*

*Unusually cool, wet, cloudy weather resulted in higher revenues, principally in the gas service.*

*Kilowatt-hour sales of electricity increased 14.2% over the previous year.*

*Therms of gas sold increased 17.7% over the previous year.*

*Net income for the year was \$13,162,522 compared with \$8,848,895 for the previous year.*

*Expenditures on new plant, including the Peace and Columbia projects, were \$105,303,750, about \$35,000,000 more than in the previous year.*

# ANNUAL REPORT OF BRITISH COLUMBIA HYDRO AND POWER AUTHORITY FOR THE YEAR ENDED 31 MARCH 1965

*The buoyant economic conditions in British Columbia and the increased usage of the Authority's services as a consequence of the cool, wet, cloudy summer and an unusually severe winter are reflected in the volume of business and revenues of the Authority for the year.*

## RESULTS OF OPERATIONS

Gross revenue for the year ended 31 March 1965 amounted to \$153,307,283, an increase of 9.8% over the gross revenue for the previous financial year.

Net income after providing for all expenses amounted to \$13,162,522, compared with \$8,848,895 for the previous year. The net income was transferred to stabilization of rates and contingency reserve and has been used by the Authority to finance, in part, expenditures for plant renewals and expansion for 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 1965	Year Ended 31 March 1964
<b>WHERE THE REVENUE CAME FROM</b>		
Sale of electricity to residential customers.....	\$ 40,633,822	\$ 38,514,428
Sale of electricity to other customers.....	60,387,337	54,802,305
Sale of gas.....	29,995,708	25,738,530
Transportation of urban and interurban passengers.....	14,533,723	13,744,193
Rail freight operations.....	5,868,406	5,616,592
Miscellaneous.....	1,888,287	1,216,753
	<u>\$ 153,307,283</u>	<u>\$139,632,801</u>
<b>HOW THE REVENUE WAS USED</b>		
Salaries, wages and employee benefits.....	\$ 32,916,747	\$ 31,297,347
Materials and services.....	26,974,881	23,155,798
Grants, school taxes, transit franchises, etc.....	9,850,489	9,109,736
Interest and other costs on debt, less interest charged to construction.....	43,270,890	41,918,621
Depreciation of plant.....	27,131,754	25,302,404
Balance employed in the business.....	13,162,522	8,848,895
	<u>\$153,307,283</u>	<u>\$139,632,801</u>

### AWARD BY NORTHWEST PUBLIC POWER ASSOCIATION

In March 1965 Northwest Public Power Association, comprising publicly owned utilities in Alaska, Alberta, British Columbia, Idaho, Montana, Oregon and Washington, presented the Authority with the Paul J. Raver Award for Community Service. The citation stated that since British Columbia Hydro and Power Authority was formed in 1962 it has vigorously pursued a policy of development in British Columbia. After listing the achievements of the Authority, such as progress on the Peace River Project, conclusion of the Columbia River Treaty, rural electrification, rate reductions and improvement in service, the citation stated: "The annals of the electric utility industry have never recorded so much progress in so little time."

## ELECTRIC SERVICE

### RATE REDUCTIONS

On 30 March 1965 the Authority announced the fourth reduction in electric rates in as many years. The cumulative effect of the four reductions is to reduce the cost of electricity to consumers by more than \$19,000,000 a year. It is believed that no other Canadian utility (and possibly no utility in North America) has ever reduced rates to such an extent in so short a period of time.

The extent of the reduction since 1961 in the monthly electric bills of residential customers is illustrated below:

LOWER MAINLAND			
Monthly Consumption	1961	1965	Decrease
150 kwh	\$ 5.50	\$ 3.00	45%
300 kwh	9.17	6.00	35%
600 kwh	11.87	9.00	24%
1,000 kwh	16.19	13.00	20%

SEVEN OTHER DISTRICTS*			
Monthly Consumption	1961	1965	Decrease
150 kwh	\$ 5.20	\$ 3.00	42%
300 kwh	8.50	6.00	29%
600 kwh	11.50	9.00	22%
1,000 kwh	15.50	13.00	16%

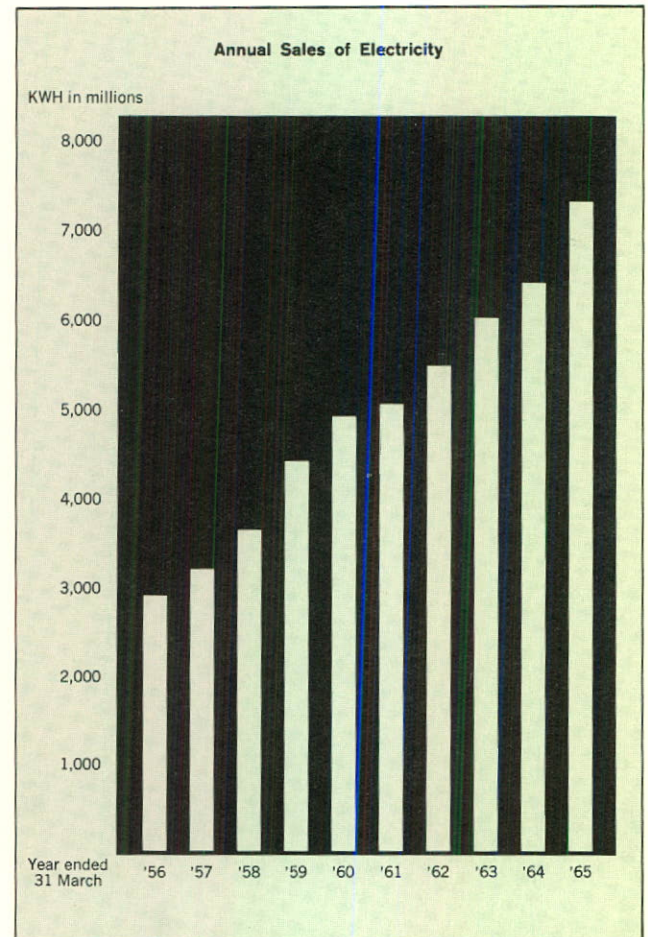
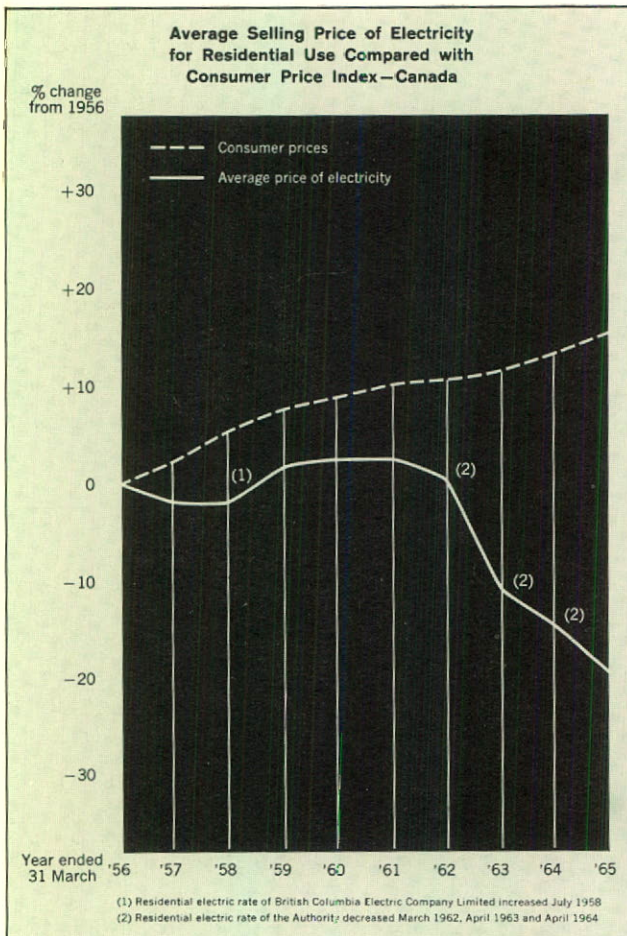
\*The seven other districts are Alberni, North Okanagan and Zone 1 of each of Comox-Campbell River, Duncan, Kamloops, Nanaimo and Prince George.

Residential customers will benefit to the extent of \$5,500,000 annually from the rate reduction announced on 30 March 1965; savings of \$1,600,000 annually will be reflected in the bills of other classes of customers. For the first time unlimited "one-cent power" is available to all residential customers and this should encourage home owners to make greater use of electric appliances, air conditioning, decorative lighting and electric heating.

### SALE OF ELECTRICITY

Gross revenue from the electric service totalled \$101,021,159 for the year, an increase of 8.3% over the previous year. Kilowatt-hours of electricity sold during the year were 14.2% higher than in the previous twelve months, nearly twice as high as the 7.6% average annual rate of increase for the previous five years. All categories of customers recorded impressive rates of increase in kilowatt-hours consumed; residential consumption was up 10.0%, general consumption up 8.9% and large industrial consumers recorded a remarkable 26.7% increase over the previous year.

The use of electricity in all regions of the Province continued to increase at a high rate. The following table shows the percentage increase in kilowatt-hour sales and the relative con-





sumption of electricity in each region:

KILOWATT-HOUR SALES		
	% Increase over Last Year	% of Total
Central Interior	26.9	4.9
Vancouver Island	22.5	32.2
Southern Interior	14.9	5.1
Fraser Valley	9.1	9.0
Metropolitan Vancouver	8.3	48.8
Total for all regions	<u>14.2</u>	<u>100.0</u>

The number of electric customers served by the Authority totalled 502,843 at 31 March 1965, an increase of 24,457 during the year. Average annual consumption per residential account rose from 5,200 kwh to 5,486 kwh.

#### METROPOLITAN VANCOUVER REGION

Nearly nine miles of underground cable were installed during the year to serve new customers. The trend towards modern apartment living in high-rise apartment blocks continued; building permits were issued for approximately 7,000 new apartment suites.

#### FRASER VALLEY REGION

The Authority expanded its holdings of industrial land in the Fraser Valley during the year and progress was made in the development and sale of sites in the Langley and Newton industrial centres. The Fraser Valley offers many attractions

to secondary manufacturing enterprises, including complete utility services, moderately priced land, room for expansion, highway access and the Authority's rail freight service.

Residential and commercial building permits issued during the year increased 8% and 27% respectively over the previous year; more than 1,000 new apartment suites are already planned for 1965. Active promotion of electricity for farm purposes resulted in a steady increase in the use of electricity for irrigation, crop drying and dairy heating.

#### VANCOUVER ISLAND REGION

More than 100 miles of distribution lines were constructed during the year; additional communities now served by the Authority include Kelsey Bay, Sayward, Coal Harbour, Rumble Beach, Jeune Landing, Opitsat and Tsulguate.

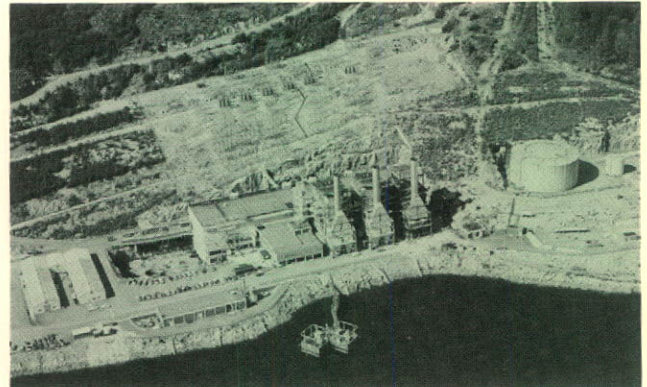
Sales of electricity to pulp and paper mills showed large increases during the year and were mainly responsible for the 31.4% increase in sales to large industrial customers on Vancouver Island.

#### SOUTHERN INTERIOR REGION

Demand for residential electric space heating exceeded expectations and is now a significant factor in planning future distribution lines. In the Westbank-Peachland District, 11% of the residential customers use electricity for heating and electric heating systems are installed in 80% of all new homes.



An unusual sight in Vancouver. Linemen on snowshoes in West Vancouver during the period of record snowfall in December 1964.



Burrard Thermal Generating Plant near Vancouver, the Authority's largest single source of thermal power.



One of the Authority's seven 1,000 kw power generating rail cars; each can be moved quickly to any point on the Province's railway network.

A number of communities have improved their street lighting and 424 new units were installed during the year.

More than 150 miles of rural line extensions were constructed during the year to serve approximately 300 customers in areas such as Tete Jaune Cache, Skookumchuck, Chu Chua, Clearwater to Wells Gray Park and Brookmere. There were 2,383 new services installed in the Southern Interior Region during the year.

#### CENTRAL INTERIOR REGION

Northern British Columbia Power Company Limited, serving 4,500 customers in the City of Prince Rupert, the Village of Stewart and their neighbouring areas, was purchased by the Authority in November 1964 and its plant and operations were added to the Central Interior Region.

Proposed new pulp mills at Prince George, Prince Rupert and Houston, and the prospect of other mills and chemical plants being constructed, spurred industrial, commercial and residential growth well beyond expectations.

Approximately 500 miles of new transmission lines and nearly 300 miles of new distribution circuits were put into service during the year. Rural communities added to the areas served by the Authority include Topley and Perow, Kitwanga, Narcosli, Lakelse, Braeside, Mapes and Cluculz Lake, Salmon Valley and Sinclair Mills. There were 3,033 new services installed in the Central Interior Region.

#### PRODUCTION OF ELECTRICITY

The largest one-hour demand ever recorded on the integrated electric system, 1,490,000 kw, occurred on 16 December 1964. The non-coincidental peak demand for the entire system during the year was 1,637,000 kw, up 17.3% from the previous year. This increase in demand is attributable both to the unusually cold weather in December and to the addition of new loads, including the load in the Prince Rupert area which was formerly supplied by Northern British Columbia Power Company Limited.

The total installed nameplate generating capacity at 31 March 1965 was 1,893,592 kw, comprising 1,305,722 kw hydro and 587,870 kw thermal capacity. There are now 23 generating plants powered by diesel-type engines, augmented by 12 mobile units.



Prince Rupert, northernmost port city of British Columbia, served by the Authority since November 1964.

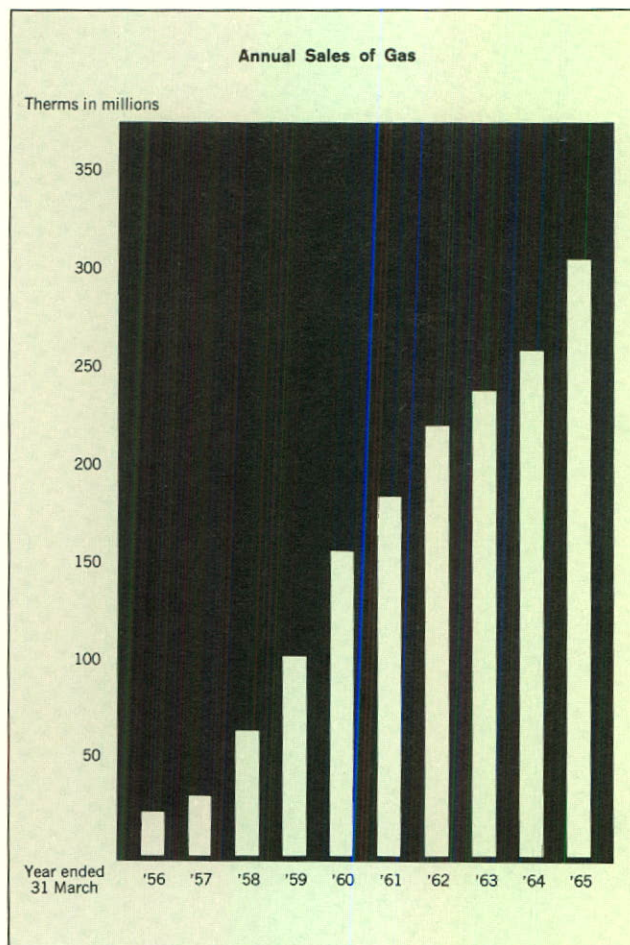
## GAS SERVICE

Gas sales to the public amounted to \$29,995,708, up 16.5% from the previous year. This increase is attributable to three principal factors:

- (a) Customers served by the Authority rose by 7,837 to 153,118, an increase of 5.4%.
- (b) Gas heating was installed in 9,500 homes during the year, including homes of customers already using gas for other purposes.
- (c) Unusually cold weather was experienced during the summer and winter; 6,211 degree days were recorded at the Vancouver Airport, 18.2% over the previous year.

Several weather records were broken during a cold snap in December 1964; snowfall for the month measured 35.2 inches and the minimum temperature at the Airport dropped to 1.9°. On 15 December the total output of gas on the Lower Mainland reached a peak for one day of 219 million cubic feet, an increase of 48.5% over the previous peak established on 10 January 1963.

Surveys indicate that 38% of the homes in the Lower Mainland now use natural gas for heating. It is estimated that gas heating is installed in 95% of all new homes built in areas where natural gas is supplied by the Authority.



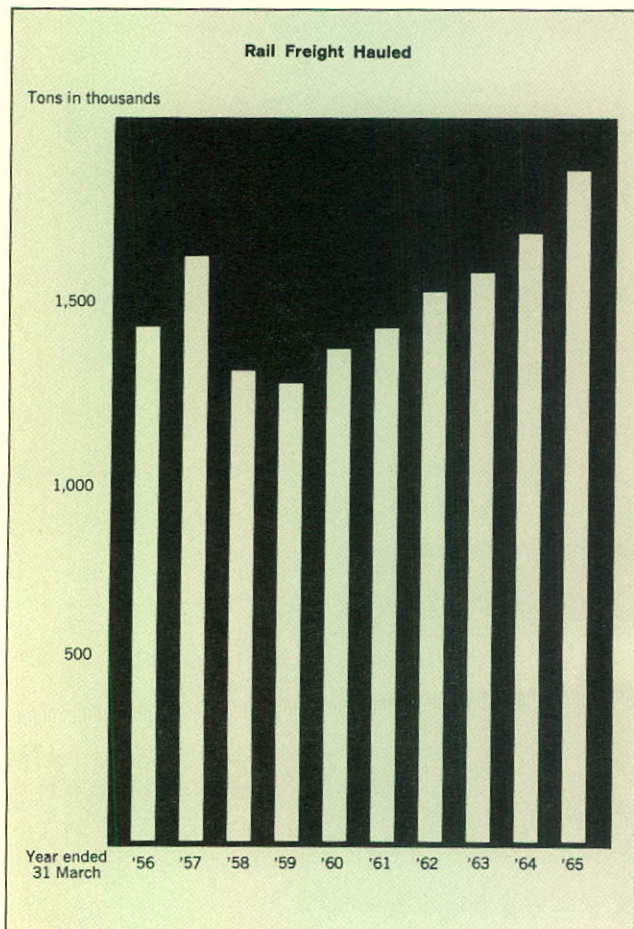
Other significant events during the year included the following:

- (a) Installation of 18 miles of 30-inch main and 3 miles of 20-inch main, thus completing the original plan for the Fraser Valley gas transmission system.
- (b) Operation of Burrard Thermal Generating Plant using natural gas as fuel on a year-round basis. Gas consumption at this plant exceeded 4 billion cubic feet, or 12.1% of total gas purchased.

**NATURAL GAS SUPPLY**

Westcoast Transmission Company Limited supplies natural gas to the Authority on the Lower Mainland. At the beginning of the fiscal year the maximum daily billing demand for firm gas was 108 million cubic feet. This demand was increased to 120 million cubic feet on 1 November 1964 and, because of abnormally cold weather, to 138.8 million cubic feet on 16 December 1964.

In July 1964 the National Energy Board authorized Westcoast Transmission Company Limited to extend its gas transmission system to the Fort Nelson gas fields. This line was not completed until after the winter peak and consequently the supply to most of the interruptible customers of the Authority had to be curtailed for several days during December 1964 and January 1965.



**TRANSPORTATION SERVICES**

The urban transportation services of the Authority in Vancouver, Victoria and neighbouring areas have sustained increasing operating losses for many years. To reduce these losses certain fare increases were proposed in May 1964. The cities and municipalities with franchise agreements did not agree to the proposed increases and it was therefore necessary to refer to the Public Utilities Commission for a decision. In December 1964, after lengthy hearings, the Commission granted fare increases which were somewhat less than those requested by the Authority. The new fares became effective on 1 January 1965 and are estimated to increase revenues by \$1,900,000 on an annual basis.

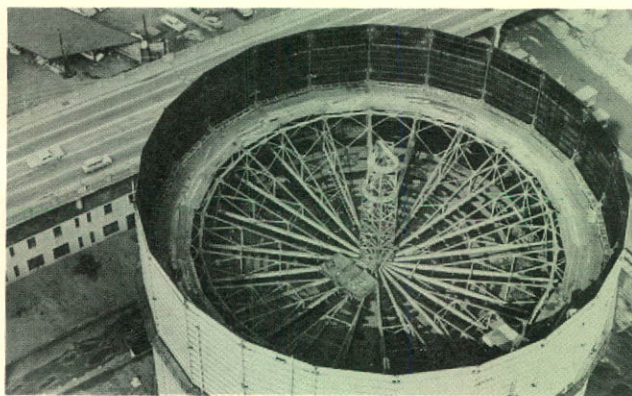
Gross revenue from the urban transportation services during the year was \$11,892,333, up 7.5% from the previous year. This increase resulted primarily from the new fares introduced in January. A further contributing factor was the increased patronage attributable to the bad weather experienced in the winter months. In December nearly 850,000 more passengers were carried than in the same month of 1963.

Sixteen new 45-passenger diesel buses were put into service in North Vancouver in October 1964. Orders have been placed for 50 new large diesel buses for use in the Greater Vancouver area and 10 for use in the Victoria area. In addition, 5 specially powered buses have been ordered to provide service to Simon Fraser University on Burnaby Mountain. All new transit vehicles have the colour scheme adopted last year, off-white trimmed with blue and green. Existing vehicles are being repainted in the new colours.

On Pacific Stage Lines' interurban routes both revenue and passengers carried declined during the year, partly through a rearrangement of routes between urban and interurban services. Charter revenue, however, showed improvement.

Gross revenue from rail freight operations amounted to \$5,868,406 for the year, an increase of 4.5% over the previous year, despite strong competition from highway carriers.

The settlement of new industries on the Authority's industrial lands adjacent to the railway and the interest of prospective new industries continue at a level higher than at any time in the past. Future growth of the rail freight service will come primarily from this source. At the year-end 32 new spur tracks for industrial plants were in various stages of planning.



A landmark disappears. Thirty-five-year-old gas storage tank, made obsolete by advent of natural gas, is demolished in Vancouver.

## COST OF PROVIDING SERVICES

The cost of providing services during the year was \$140,144,761, an increase of \$9,360,855 or 7.2% over the previous year.

Interest and related costs rose by 6.7% to \$47,729,887; of this amount \$4,458,997 was charged to plant under construction and the net charge against revenue was \$1,352,269 greater than in the previous year. Provision for depreciation of plant was \$27,131,754 compared with \$25,302,404 last year, an increase of 7.2%. 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, including the purchase of Northern British Columbia Power Company Limited. The Authority's depreciation rates are comparable to those used by other utilities.

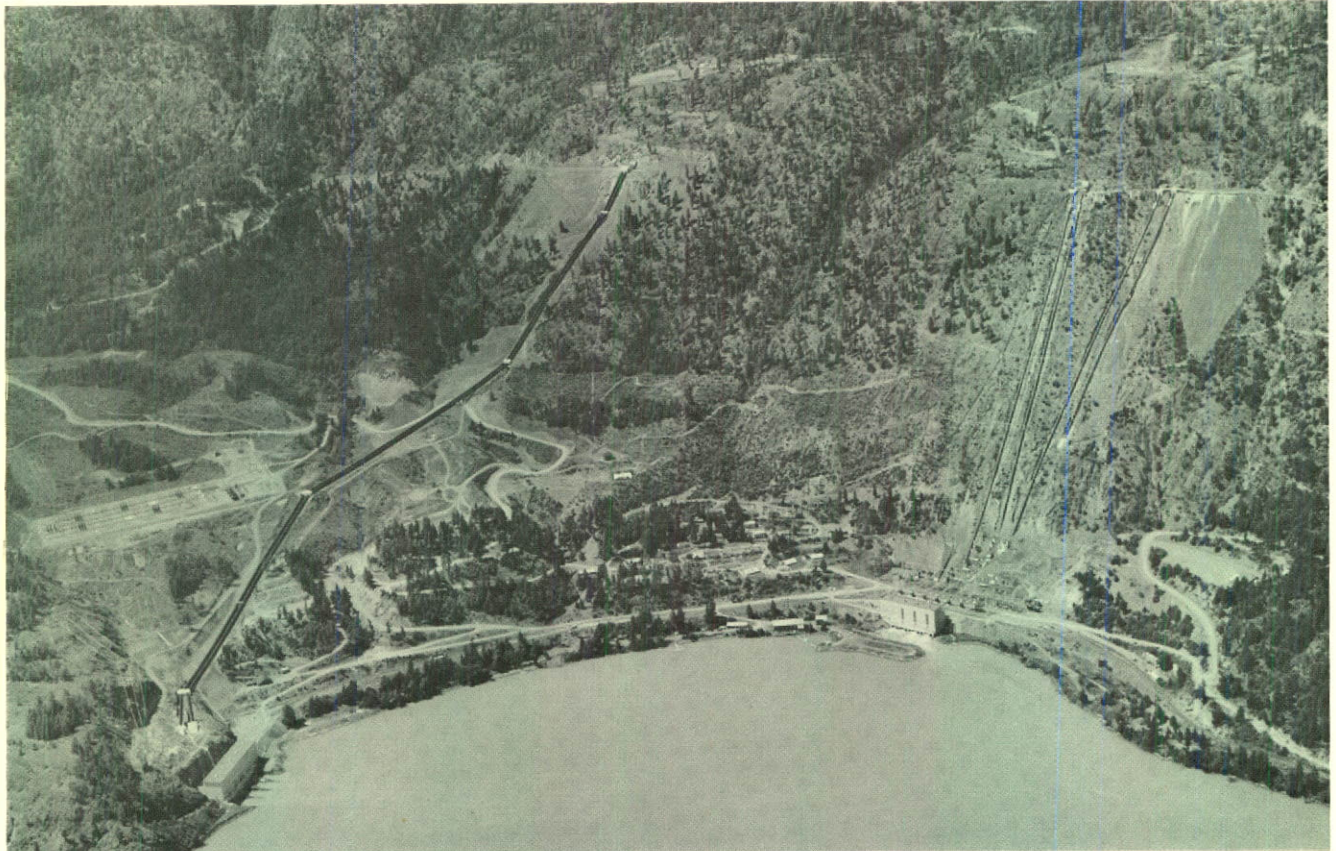
Salaries, wages and employee benefits charged to operations amounted to \$32,916,747, an increase of 5.2% over the previous year. This increase was caused by staff additions and by higher rates of pay under the terms of the various union agreements.

Operation of Burrard Thermal Generating Plant on natural gas for the first time on a year-round basis and the exceptionally cold weather in December and January had a marked effect on expenditures for natural gas. Purchases of natural gas from Westcoast Transmission Company Limited during the year amounted to \$11,755,634, an increase of \$2,244,152 or 23.6% over the previous year. The cost of other materials and services charged to operations was \$15,219,247, up 11.5%. This increase reflects record demands arising from the severe winter weather, the load growth caused by a rapidly growing per capita consumption of electricity and a high level of building activity throughout the Province.

Fuel costs at Burrard Thermal Generating Plant would have been substantially higher but for a favourable supply of water which permitted the hydro-electric plants to be operated to a greater extent than in a normal water year.

Grants, school taxes, water rentals and franchise payments charged to operations during the year totalled \$9,850,489, an increase of \$740,753 or 8.1% 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.



*Two powerhouses of the 492,000 kw Bridge River hydro-electric system, Seton Lake.*

## FINANCING

Three issues of 5¼% 30-year sinking fund bonds, Series L, M and N, totalling \$40,000,000, were sold by the Authority during the year, at an average effective interest cost of 5.32%.

On 3 August 1964, the Authority issued \$50,505,000 5% Parity Development Bonds Series K, maturing 3 August 1968, which were well received by the public and completely sold in a very short time. The proceeds of this issue were used, in part, to repay the Authority's short-term notes held by the Province of British Columbia; the balance was used for current plant expenditures.

During the year \$4,000,000 4½% Series U debentures, payable in United States funds, and \$3,231,000 5% Series MB bonds, both of which were issued by British Columbia Power Commission, reached maturity and were repaid at a cost of \$7,559,750.

The amount of \$11,641,080 was paid to Trustees during the year to meet sinking fund requirements of the various securities. All sinking fund obligations have been met.

All bonds, debentures and notes of the Authority are unconditionally guaranteed as to principal and interest by the Province of British Columbia.

### COLUMBIA RIVER TREATY FUNDS

On 16 September 1964 Canada and the United States exchanged ratifications of the Columbia River Treaty and 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 and, with interest of \$7,785,023 accumulated during the period 16 September 1964 to 31 March 1965, had grown to \$281,076,684 at the end of the fiscal period. Of this amount \$24,684,435 had been used to reimburse the Authority for substantial preliminary expenditures incurred before the Treaty was ratified and to pay for engineering and construction to date on the Treaty dams; and \$32,324,270 had been borrowed temporarily by the Authority (at 5% interest) for other purposes. The remainder was invested by the Fiscal Agent for the Authority as follows:

Province of Quebec – 5.05% short-term notes.....	\$100,000,000
Bank of Montreal – 5.40% deposit account.....	69,475,000
Kinross Mortgage Corporation – 5.67% short-term notes guaranteed by Canadian Imperial Bank of Commerce.....	50,000,000
Pacific Great Eastern Railway Company – 5% notes.....	4,000,000
Miscellaneous.....	592,979
Total.....	<u>\$224,067,979</u>

## STATEMENT OF SOURCE AND APPLICATION OF FUNDS FOR THE YEAR ENDED 31 MARCH 1965

### FUNDS PROVIDED FROM

Operations:	
Net income.....	\$ 13,162,522
Charges against operations calling for no current outlay of cash –	
Provision for depreciation.....	27,131,754
Other.....	1,651,074
Sales of property.....	4,132,636
Proceeds from sales of securities:	
Parity development bonds.....	49,947,860
Other bonds.....	39,504,843
Columbia River Treaty payment (including interest).....	281,076,684
Reduction in working capital, etc.....	5,614,111
	<u>\$422,221,484</u>

### FUNDS EXPENDED FOR

Peace River Project.....	\$ 29,093,244
Columbia River Development.....	14,855,357
Other plant.....	61,355,149
Sinking fund purposes.....	11,641,080
Redemption of bond issues.....	7,559,750
Redemption of notes payable to Provincial Government.....	19,836,425
Redemption of notes held in United States.....	53,812,500
Investment of Columbia River Treaty funds.....	224,067,979
	<u>\$422,221,484</u>

## CONSTRUCTION PROGRAM

Expenditures on plant additions, land and improvements amounted to \$105,303,750, compared with \$70,578,153 in the previous year. Net additions amounted to \$95,596,580 after deducting plant retirements of \$9,707,170.

Major expenditures included the following:

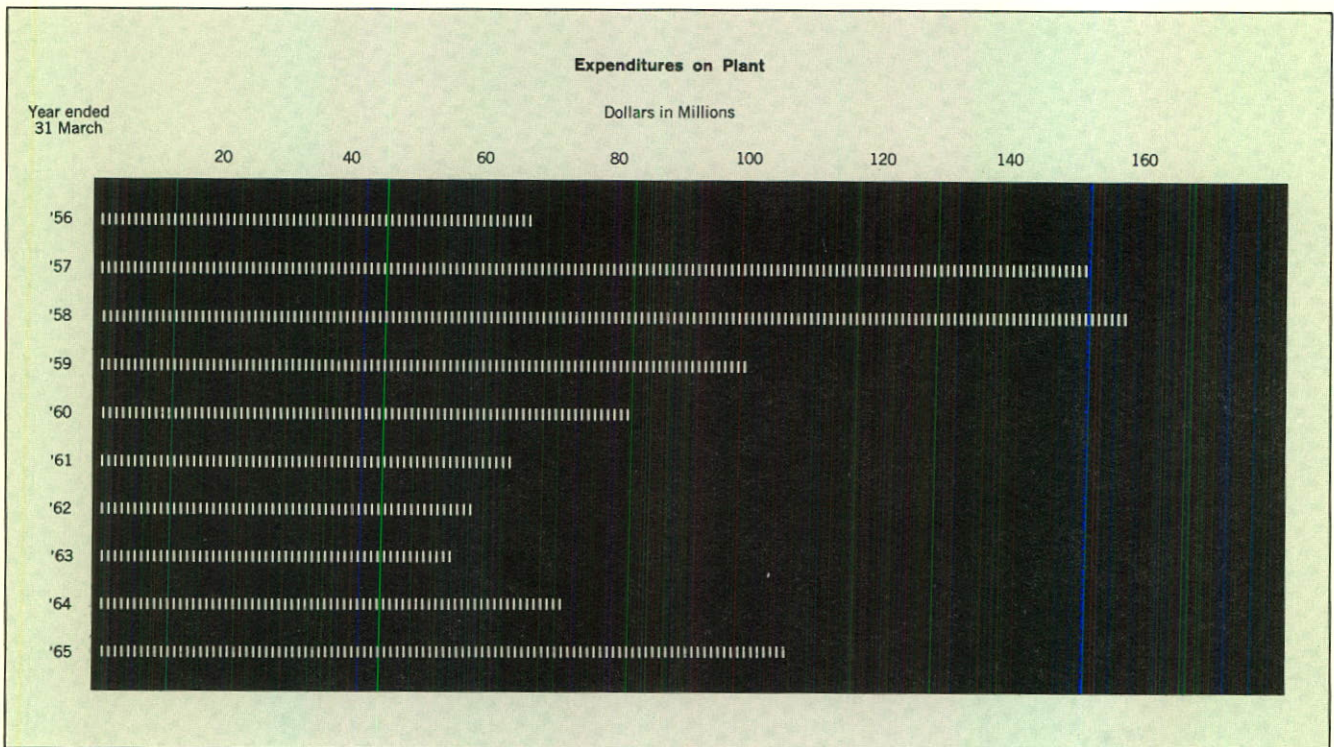
Peace River Project .....	\$29,093,244
Columbia River Development .....	14,855,357
Burrard Thermal Generating Plant .....	5,554,946
Diesel generating stations .....	3,999,129
Major electric transmission line construction:	
Bridge River to Prince George - 230 kv .....	3,438,861
100 Mile House to Carquille and Boss Mountain - 60 kv .....	2,207,563
Prince George to McEwan and Upper Fraser - 60 kv .....	1,434,448
Ingledow to U.S. border - 500 kv .....	1,120,240
Kelly Lake to Savona - 230 kv .....	1,010,580
Substations, associated distribution facilities and local transmission systems - electric .....	9,981,054
Electric extensions to serve new customers .....	12,089,599
Gas supply lines and other system improvements .....	2,136,437
Gas extensions to serve new customers .....	3,442,493
Buses for North Vancouver transit system .....	571,708
Rail freight yard expansion, New Westminster .....	556,522

At Burrard Thermal Generating Plant the work of installing the third 150,000 kw unit progressed steadily and the unit is now being tested for service. A fourth 150,000 kw unit is planned for service in 1967.

Throughout the year the engineering staff were active in planning and designing transmission, substations and distribution facilities. Work continued on plans for the extension and reinforcement of the main transmission system for both present and future needs.

The 250-mile 230 kv transmission line from Bridge River to Prince George was completed and put into service in mid-December. This line now extends the integrated system to include the central interior of the Province. A start was made on the 75-mile transmission line which will bring the southern interior system also into the integrated system. The first step will include the construction of a 230 kv transmission line from Kelly Lake Substation to Savona and a 138 kv line from Savona to Valleyview Substation in the Kamloops area.

Construction of a second link with Bonneville Power Administration at the border between Canada and the United States is well advanced. This 13.6-mile line, which will operate initially at 230 kv, is being built for operation at 500 kv after the first transmission line from the Peace River hydro-electric power development is completed in 1968. It will provide additional security and improved opportunity for interchanges of power with the other utilities of the Northwest Power Pool.



To meet the rapidly growing load on Vancouver Island a contract has been awarded for terminal equipment to be used in connection with a high voltage direct current transmission link between the Mainland and Vancouver Island.

During the year a 138 kv transmission line was constructed in the Columbia Valley between Spillimacheen and Golden (39 miles). Construction of 40 miles of 138 kv line between Kamloops and Barriere is under way. In the Prince George area 138 kv lines have been built from Willow River to McEwan (30 miles) and Willow River to Upper Fraser (24 miles). A 46-mile 60 kv transmission extension was built from Vanderhoof to Endako. Further extensions to the 60 kv transmission lines in this area were made from Prince George to the Northwood Pulp Limited plant (5.4 miles) and from Prince George to Willow River (17 miles). A 60 kv line is being extended from Quesnel north to Colebank, a distance of 32 miles.

A 67-mile transmission line was built between Carquille and 100 Mile House; this line is currently operating at 60 kv but some 46 miles have been built to 138 kv standards. A 50-mile 60 kv transmission line extension from 100 Mile House to the Noranda Mines, Limited molybdenum property at Boss Mountain was completed early in February 1965. Part of this line also is designed for future interconnections at 138 kv.

Materials, including steel towers, conductor and insulators have been ordered, and a construction contract has been let for the first two sections of a 500 kv transmission line from the Portage Mountain Generating Plant on the Peace River to the Lower Mainland. These sections cover the 205 miles between Prince George and Kelly Lake. Surveying and clearing of the sections north of Prince George are in progress.

Field work has started for location of a transmission line from Kitimat to Terrace and from Terrace to Prince Rupert to bring power purchased from the Aluminum Company of Canada, Limited to the Prince Rupert area to supplement existing generating capacity and to serve new industrial loads.

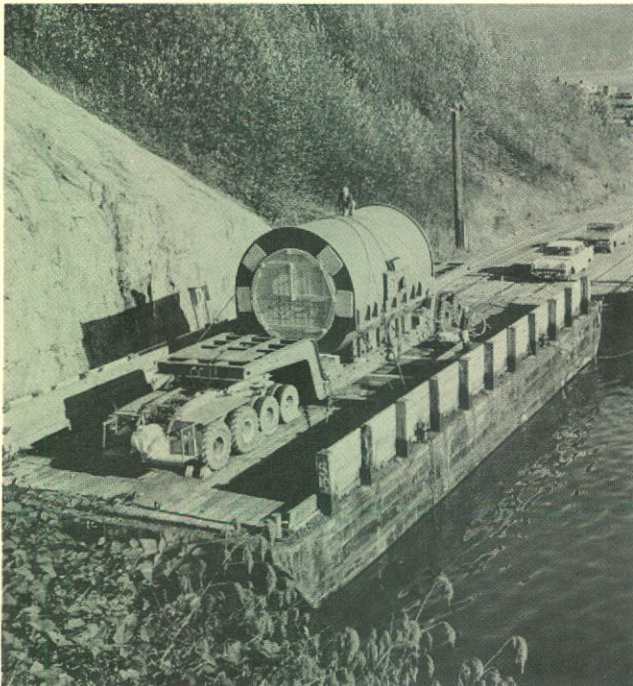
New substations were built and additions to existing substations were made in various parts of the Province as required to meet the load growth.

Alterations and additions were made to diesel generating stations at Chetwynd, Dawson Creek, Valemount, Fort Nelson, McBride, Burns Lake and Alert Bay.

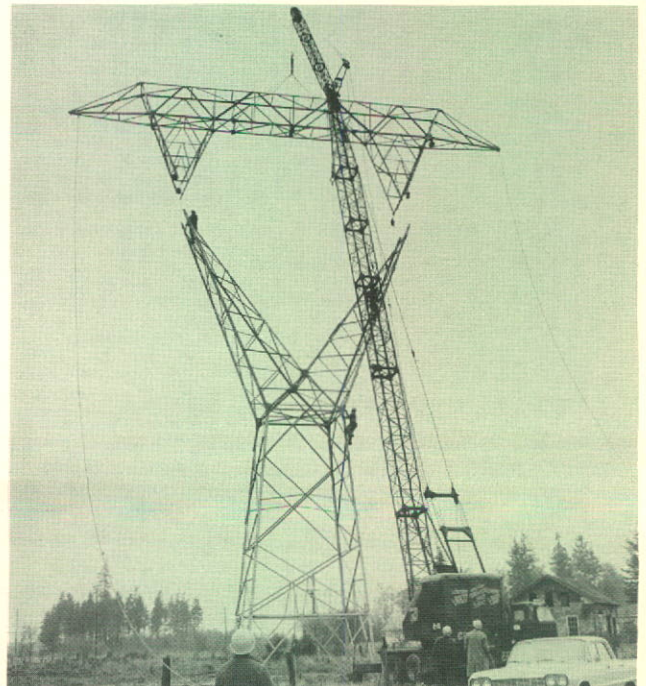
A contract has been awarded for a main trunk microwave system to provide communication channels for protective relaying and control of existing and future generating and substation plants.

Major contracts awarded during the year, other than for the Peace River Project and the Columbia River Development, included:

Canadian ASEA Electric Limited – <i>Supply and erection of equipment for power transmission to Vancouver Island</i> .....	\$17,555,000
Collins Radio Company of Canada Ltd. – <i>Construction of microwave system</i> .....	5,253,941
Marine Pipeline & Dredging Ltd. – <i>Construction of 30-inch natural gas transmission line</i> .....	712,746



A 184-ton stator being delivered for the third 150,000 kw generating unit at Burrard Thermal Generating Plant.



A transmission tower being erected on the new 500 kv line from Vancouver to the United States border.





## PEACE RIVER PROJECT

The total spent on the Peace River Project to 31 March 1965 was \$77,631,925, of which \$29,093,244 was spent during the year under review.

The high flow in the river reached an estimated peak of 314,000 cubic feet per second on 14 June 1964. All elements of the diversion – the upstream cofferdam, the three tunnels and the downstream cofferdam – performed satisfactorily.

On 30 July 1964 the Premier of British Columbia officially started the conveyor system. The main plant feed conveyor is 15,000 feet in length and is believed to be the longest single-flight conveyor belt in the world. The conveyor and processing plant worked up to full rated capacity of 12,000 tons an hour by the end of the construction season early in November. Approximately 4,424,000 cubic yards of dam embankment material were placed before the winter shutdown.

The peak work force in 1964, including men engaged in clearing the Peace River transmission right-of-way, was 1,453 men. The work force is expected to increase substantially in 1966.

There will be increased activity in the year ahead. Tenders were called in January 1965 for the construction of the underground power plant. With the access tunnels rapidly nearing completion, work on the power plant excavation will be started immediately following award of the contract.

Major contracts awarded during the year included:

Canadian General Electric Company Limited Supply of five generators.....	\$7,595,810
Kiewit-Dawson-Johnson (subcontracted to Elektrosond of Canada Limited) Construction of grout curtain for Portage Mountain Dam.....	5,122,000
Mitsubishi International Corporation Design and supply of turbines and governors.....	4,685,000

Aluminum Company of Canada, Limited Supply of aluminum conductor, transmission line.....	3,743,352
Northern Construction Co. & J. W. Stewart Limited Excavation of powerhouse access tunnels.....	1,767,830
Societa Anonima Elettrificazione, S.p.A. Design and supply of transmission towers.....	1,580,711
MacArthur Construction Co. Ltd. Clearing for transmission line.....	418,000
McPhail's Construction Co. Ltd. Clearing for transmission line.....	168,000

### 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

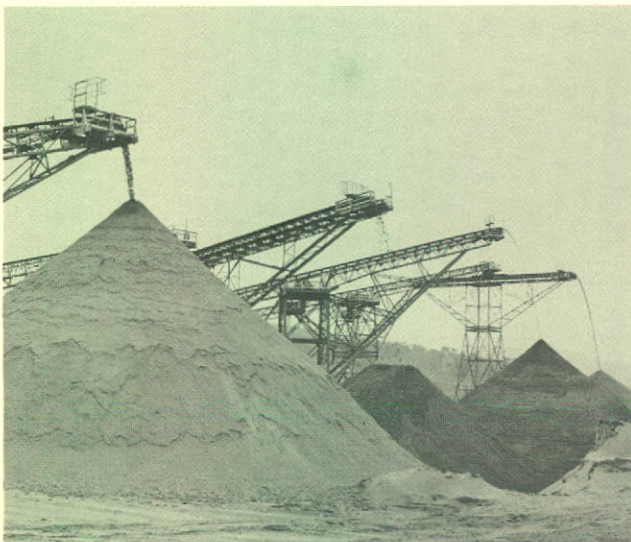
580 miles to southwest corner of the Province. Two lines: the first to operate at 500,000 volts A.C.

### SECOND STAGE

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

### EMPLOYMENT

Estimated peak labour force:	
1965 – 1,600 men	1967 – 2,500 men
1966 – 2,500 men	1968 – 2,000 men



Material stacking towers and stock piles at fill-processing plant, Peace River Project.



Aerial view of the Peace River Project, with outlets of diversion tunnels in left foreground.

◀ Part of the conveyor belt, 66 inches wide and 15,000 feet long, built to transport material for Portage Mountain Dam.

## COLUMBIA RIVER DEVELOPMENT

On 10 June 1964 the Senate of Canada approved the Treaty between Canada and the United States relating to the cooperative development of the water resources of the Columbia River Basin. The contract for clearing the site for the Duncan Dam was awarded immediately.

The instruments of ratification of the Treaty were formally exchanged by the two Governments on 16 September 1964. This historic event – the culmination of twenty years of Federal-Provincial and international negotiations – was celebrated the same day at a ceremony attended by President Johnson of the United States, Prime Minister Pearson of Canada and Premier Bennett of British Columbia at the Peace Arch on the border between British Columbia and Washington.

The Authority was designated as the Canadian Entity under the terms of the Treaty 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 storage dams has been sold to the Columbia Storage Power Exchange (a non-profit corporation organized under the laws of the State of Washington) for periods of thirty years from the scheduled dates of completion of the respective dams. As a result of this sale the Government of British Columbia received \$273,291,661 and this amount was transferred to the Authority on 16 September 1964.

As the storage dams are completed, in accordance with the terms of the Treaty, amounts aggregating \$64,400,000 in United States currency will be receivable by the Government of British Columbia for providing flood control.

The Authority has retained consulting engineering firms for each of the three Treaty projects as follows:

Duncan – Montreal Engineering Company, Limited.

Arrow – C.B.A. Engineering Ltd.

Mica – Caseco Consultants Limited.

An engineering Board of Review has been appointed to review designs and construction work on the projects. The members of the Board are:

J. Barry Cooke, *Consulting Engineer, California.*

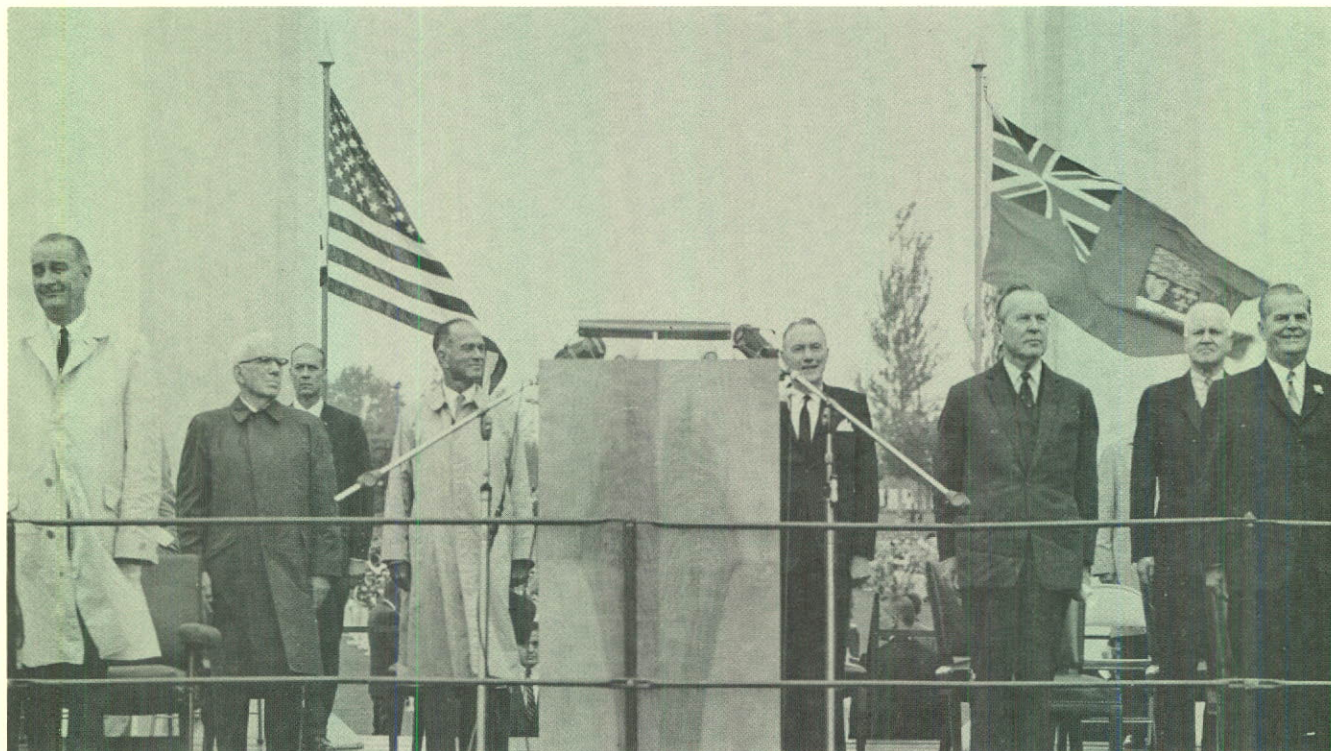
Calvin V. Davis, *Chairman, Harza Engineering Company, Chicago, Illinois.*

John O. Gorman, *Geology and Soil Mechanics Engineer, Hydro-Electric Power Commission of Ontario.*

J. Gordon Watson, *Chief Engineer, Prairie Farms Rehabilitation Administration.*

Raymond A. Wheeler, *Lieutenant-General, U.S. Army, retired.*

COLUMBIA RIVER TREATY DAMS			
	Duncan	Arrow	Mica
Height (feet)	120	190	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



President Lyndon B. Johnson, Prime Minister Lester B. Pearson and Premier W. A. C. Bennett at the Peace Arch, 16 September 1964.

Construction of the Duncan Dam is being undertaken by a consortium consisting of Mannix Co. Ltd., Standard-General Construction (International) Ltd. and Emil Anderson Construction Co. Ltd. Information obtained from recent sub-surface investigations and from detailed model studies of the tunnel intakes and spillway structure has been incorporated into the contract drawings.

A contract for construction of the Arrow Dam has been awarded to a joint venture of The Foundation Company of Canada Limited and Dravo of Canada Limited, both of Toronto, on a target-estimate basis. Associated works have been constructed to provide an alternative water supply and temporary log-handling facilities for the Celgar mill during the dam construction period.

On the Mica Project an exploratory tunnel has been completed and other drilling investigations carried out. Work is proceeding on a plant to provide power during construction and a contract has been let for clearing the initial damsite and campsite. Contracts will be awarded in 1965 for the relocation of a major part of the access road from Revelstoke, for the first stage of the construction town and for two diversion tunnels, each 45 feet in diameter.

Other related work under construction at various points during the year included highway and railway relocations, property relocations, school facilities, alternative water supplies and treatment plants and relocation of power and communication lines. Detailed studies and field investigations have been carried out on the stability of the Arrow reservoir banks and on a proposed dyke at Revelstoke.

Judge McLeod M. Colquhoun of Penticton was selected by Chief Justice J. O. Wilson, of the Supreme Court of British Columbia, to act as Special Commissioner or "Ombudsman" dealing with complaints from people who may feel adversely affected by the Columbia River Treaty projects. The selection was made at the request of the Authority and the appointment is believed to be the first of its kind in Canada. About two thousand persons will have to move or may otherwise be affected as a result of the construction of the Treaty dams.

Total expenditure on the Columbia projects to 31 March 1965 was \$24,684,435, of which \$14,855,357 was spent during the year under review.

Major contracts awarded during the year included:

Foundation-Dravo	
<i>Construction of Arrow Dam</i> .....	\$55,000,000
Mannix-Standard-Anderson	
<i>Construction of Duncan Dam</i> .....	15,899,857
Whitticks' Mechanical Contractors Ltd.	
<i>Construction of civil work for</i>	
<i>Celgar water supply, Arrow Lake</i> .....	2,055,925
Peter Kiewit Sons Company of Canada Ltd.	
<i>Relocating C.P.R. track, Arrow Lake</i> .....	1,002,893
Boyles Bros. Drilling Company Ltd.	
<i>Preliminary drilling, Mica Project</i> .....	300,000

## ORGANIZATION AND STAFF

At 31 March 1965 the Authority had a staff of 6,006 regular employees, an increase of 202 or 3.5% since the formation of the Authority in March 1962. In the same three-year period annual sales of kilowatt-hours of electricity and therms of gas rose by 31.9% and 40.1% respectively and annual expenditures on plant increased by 84.3%.

In November 1964 the duties and responsibilities of the Economic and Commercial Services Division were taken over by two new divisions – the Commercial Services Division and the Major Resources Division. Mr. H. A. Elliott was appointed Manager of the Commercial Services Division. Mr. W. D. Kennedy was appointed Manager of the Major Resources Division which is responsible for the duties of the Canadian Entity under the terms of the Columbia River Treaty and for the long-term planning of the development of major power resources in British Columbia.

In March 1965 Mr. J. P. Ottesen, Peace River Project Manager, was assigned responsibility for supervision and control of construction of the Duncan, Arrow and Mica Dams on the Columbia River, in addition to his duties on the Peace River Project. Mr. R. C. McMordie, as Columbia Projects Manager, is responsible for engineering design, rehabilitation and reservoir management and relations with the Columbia Board of Review, the engineering consultants and local authorities in the project areas.

In August 1964 Mr. John J. Carson, Manager, Staff Services Division, was transferred on loan to the Treasury Board of the Federal Government for a period of one year. Mr. Garth Griffiths was appointed Acting Manager during Mr. Carson's absence in Ottawa.

New agreements were concluded during the year with the Amalgamated Transit Union and the International Brotherhood of Electrical Workers (Gas). Wage increases of approximately 8% over a period of more than two years were negotiated in each case. New agreements with the Office and Technical Employees' Union and with the Amalgamated Transit Union (Pacific Stage Lines) were in process of negotiation at the year-end.

A new pension plan was approved in principle during the year and is now being formulated in detail; it is expected to be available to employees who retire after 1 January 1965. The plan provides for integration with the Canada Pension Plan and for equal contributions by employer and employee; it is designed to produce eventually, with the Canada Pension Plan, a pension of approximately 2% of average annual earnings over the last ten years of service, for every year of service, up to a specified maximum. The new plan also contains a minimum pension provision designed to provide an improved pension in respect of service that occurred before the plan comes into effect. As a general rule, employees may remain in the plan in which they are enrolled when the new plan goes into effect, or they may join the new plan.

Increases in pensions of employees who retired with twenty or more years' service before 1 January 1965 were approved and are effective from 1 April 1965.

Mr. F. A. Lee, Executive Director, retired on 30 September 1964 but continues as a member of the Board of Directors. He has had a long and distinguished career in the public utility field in British Columbia, having been General Operations Superintendent of West Kootenay Power and Light Company, Limited before becoming a Commissioner of British Columbia Power Commission in 1959 and an Executive Director of the Authority on its formation in 1962.

Sixty-nine employees retired on pension during the year. Of these the following had more than forty-five years' service:

MR. R. H. SCALES, *Foreman Winder*  
48 years, 11 months

MR. H. G. T. ALLEN, *Lead Hand Tireman*  
47 years, 11 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.

## OUTLOOK

Aided by the Authority's program of development of the Peace and Columbia Rivers, British Columbia is entering a period of industrial expansion unparalleled in its history. This expansion may be attributed to several factors:

- (a) Abundance of natural resources.
- (b) Rapidly increasing world demand.
- (c) Strategic location.
- (d) Ample supply of electric power.

British Columbia lies in one of the world's great mineral belts. Vast areas in the central and northern regions of the Province still remain unexplored because of difficulty of access and mountainous terrain. Recently, however, improved technology and world-wide growth in demand have greatly accelerated prospecting activity. Expenditures on the search for minerals during the past two years were about \$25 million, compared with \$10 million in the preceding ten years. British Columbia's first five molybdenum mines are now in various stages of development and many other mineral deposits are being opened up both in the north and in the more settled regions of the Province. It is estimated that capital expenditures on mine development will total \$150 million in the next five years.

In the forest industry the emphasis was formerly on the production of sawn lumber; hundreds of sawmills operated in the readily accessible forested areas of the Province. Today there is intense activity in the manufacture of pulp, paper and

plywood. Twelve pulp and paper mills are in operation at the present time, including the largest newsprint mill in the world at Powell River. The plentiful timber resources of British Columbia can sustain thirty-six additional mills of the same average size as those now in production. Five new mills are under construction, six more are planned with a supply of timber assured, another has applied for a timber licence and five more are in the investigation stage. The seventeen pulp and paper mills now under construction or planned would cost an estimated \$650 million to build and would require an aggregate of about 320,000 kw of electricity.

With the world's population increasing at a rate of about six thousand an hour and living standards rising in many countries, the demand for the products of British Columbia's natural resource industries is growing rapidly. Situated on the rim of the Pacific Ocean, British Columbia is well placed to supply an increasing proportion of the material needs of a population which, in the next fifteen years, is expected to grow to two billion in other countries bordering the Pacific.

Prerequisite to success in seizing the opportunities which nature and world conditions have placed within British Columbia's grasp is an abundant supply of electric energy. Such a supply is assured by the development of the Peace and Columbia Rivers, now in progress, with an ultimate combined capacity of about 7.5 million kw, and by other developments to be undertaken when needed in the future. The Authority's electrical load growth studies indicate that in twenty years the demand for power in British Columbia will be four times what it is today. In the northern and central areas, where the prospect of Peace River power in three years' time has already initiated a substantial expansion of industrial activity, the rate of growth will be many times greater than in the Province as a whole. For example, in the Prince George, Bulkley Valley and Upper Fraser region energy consumption in 1984-85 is forecast to be twenty-four times what it was in 1964-65. A similar rate of growth is expected in the Prince Rupert area.

In the next twenty years the power resources of British Columbia will provide a foundation for expansion in industry, commerce and population almost inconceivable at the beginning of the present decade. The outlook for British Columbia has never been brighter than it is today.

## 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 (Note 1) as at 31 March 1965 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 1965 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.  
26 May 1965

PRICE WATERHOUSE & CO.,  
Chartered Accountants.  
Auditors.

**STATEMENT OF NET INCOME FOR THE YEAR ENDED 31 MARCH 1965** (Note 1)  
(with corresponding figures for the year ended 31 March 1964)

	1965	1964
Gross revenues.....	<u>\$153,307,283</u>	<u>\$139,632,801</u>
Expenses:		
Salaries, wages and employee benefits.....	32,916,747	31,297,347
Materials and services.....	26,974,881	23,155,798
Grants, school taxes, etc.....	9,850,489	9,109,736
Provision for depreciation.....	27,131,754	25,302,404
Interest and other costs on debt (Note 4).....	\$47,729,887	\$44,743,516
Less -		
Interest charged to construction.....	<u>4,458,997</u>	<u>2,824,895</u>
	<u>140,144,761</u>	<u>130,783,906</u>
Net income, transferred to stabilization of rates and contingency reserve (Note 7).....	<u>\$ 13,162,522</u>	<u>\$ 8,848,895</u>

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

**BALANCE SHEET AS AT 31 MARCH 1965** (Note 1)

(with corresponding figures as at 31 March 1964)

	1965	1964
<b>PROPERTY ACCOUNT:</b>		
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.....	\$1,126,802,162	\$1,076,121,942
Less -		
Accumulated depreciation.....	218,218,360	193,518,197
	<u>908,583,802</u>	<u>882,603,745</u>
Unfinished construction -		
Peace River Project.....	127 77,631,925	48,538,681
Columbia River Development.....	24,684,435	9,829,078
Other.....	26,600,000	25,632,241
	<u>1,037,500,162</u>	<u>966,603,745</u>
<b>CURRENT AND WORKING ASSETS:</b>		
Cash.....	1,931,487	3,201,390
Temporary investments.....	7,750,889	685,421
Accounts receivable and unbilled revenues.....	17,953,712	18,704,729
Materials and supplies at average cost.....	6,470,029	6,412,051
Prepaid expenses.....	463,983	457,526
	<u>34,570,100</u>	<u>29,461,117</u>
COLUMBIA RIVER TREATY FUNDS (Note 6).....	224,067,979	—
MORTGAGES AND OTHER DEFERRED ACCOUNTS RECEIVABLE.....	<u>4,135,032</u>	<u>2,438,626</u>
<b>DEFERRED CHARGES:</b>		
Unamortized discount and expense on long term debt and parity development bonds..	17,700,670	18,174,140
Other.....	117,848	162,159
	<u>17,818,518</u>	<u>18,336,299</u>
	<u>\$1,318,091,791</u>	<u>\$1,016,839,787</u>

APPROVED ON BEHALF OF THE BOARD:

*Hugh L. Keenleyside*

H. L. KEENLEYSIDE, Director

*E. M. Gundersen*

E. M. GUNDERSON, Director

	1965	1964
LONG TERM DEBT (Notes 2 and 3).....	\$ 739,908,956	\$ 712,451,395
PARITY DEVELOPMENT BONDS, payable on demand (Note 3):		
Issued by British Columbia Electric Company Limited –		
5½% Series A due 1 September 1965.....	85,650,400	85,650,400
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	—
	<u>186,660,400</u>	<u>136,155,400</u>
NOTES PAYABLE:		
Held by the Province of British Columbia.....	—	19,836,425
Held by others (U.S. \$50,000,000).....	—	54,062,500
	<u>—</u>	<u>73,898,925</u>
CURRENT AND ACCRUED LIABILITIES:		
Accounts payable.....	31,134,051	23,610,625
Taxes on income (Note 5).....	3,737,587	3,737,587
Interest accrued on long term debt, parity development bonds and notes payable.....	11,556,380	11,277,916
Long term debt payments due within one year –		
Sinking fund instalments.....	12,567,872	11,959,508
Debt maturities.....	—	7,556,000
	<u>58,995,890</u>	<u>58,141,636</u>
COLUMBIA RIVER TREATY OBLIGATION (Note 6):		
Amount received to construct and operate Columbia River Treaty storage dams.....	273,291,661	—
Interest.....	7,785,023	—
	<u>281,076,684</u>	<u>—</u>
CONTRIBUTIONS IN AID OF CONSTRUCTION.....	<u>7,516,200</u>	<u>5,421,292</u>
STABILIZATION OF RATES AND CONTINGENCY RESERVE (Note 7).....	43,933,661	30,771,139
	<u>\$1,318,091,791</u>	<u>\$1,016,839,787</u>
COMMITMENTS (Note 8)		

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

## NOTES TO FINANCIAL STATEMENTS AS AT 31 MARCH 1965

## NOTE 1 – FINANCIAL STATEMENTS:

Pursuant to an Order-In-Council dated 31 March 1965 the accompanying financial statements as at 31 March 1965 present the combined financial position and results of operations of

- (1) British Columbia Hydro and Power Authority, as constituted under the British Columbia Hydro and Power Authority Act, 1964 and activated in April 1964; and
- (2) British Columbia Electric Company Limited and British Columbia Power Commission carrying on business under the name of British Columbia Hydro and Power Authority (pursuant to the Power Measures Act, 1964), whose 1964 financial position and results of operations are shown in the 1964 columns.

## NOTE 2 – LONG TERM DEBT:

*Issued by British Columbia Electric Company Limited –*

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

	1965	1964
3¼% Series "A" due 2 January 1967.....	\$ 24,204,000	\$ 24,823,000
3¼% Series "B" due 1 October 1967.....	7,527,000	7,710,000
3¼% Series "C" due 1 April 1968.....	13,097,000	13,420,000
3¼% Series "D" due 1 February 1969.....	13,037,000	13,360,000
3½% Series "E" due 1 March 1975.....	15,468,000	15,869,000
4% Series "F" due 1 July 1991.....	2,976,000	3,058,000
3¼% Series "G" due 1 December 1976.....	16,566,000*	16,892,000*
4¾% Series "H" due 1 December 1977.....	12,510,000	12,783,000
4¾% Series "I" due 1 February 1979.....	12,761,000	13,024,000
3¾% Series "J" due 1 June 1980.....	13,095,000	13,354,000
4¼% Series "K" due 1 February 1981.....	26,336,000	26,835,000
5% Series "L" due 1 February 1982.....	35,888,000	36,499,000
5⅛% Series "M" due 2 January 1988.....	45,652,000	46,374,000
5½% Series "N" due 1 March 1989.....	27,870,000	28,267,000
6½% Series "O" due 1 April 1990.....	28,678,000	29,040,500
5¾% Series "P" due 1 May 1991.....	14,524,500	14,691,500

Perpetual Callable Bonds:

4%.....	527,800	659,950
4¼%.....	153,450	190,600
4½%.....	320,300	382,200
4¾%.....	859,250	1,066,500
5%.....	738,400	957,250
5½%.....	473,700	549,200

25-year Callable Bonds due 1 August 1986:

4% Series AA.....	11,472,200	11,340,050
4¼% Series AB.....	10,846,550	10,809,400
4½% Series AC.....	14,679,700	14,617,800
4¾% Series AD.....	25,554,150	25,346,900
5% Series AE.....	24,261,600	24,042,750
5½% Series AF.....	14,526,300	14,450,800

carried forward.....	\$414,602,900	\$420,413,400
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NOTE 2 – LONG TERM DEBT (continued):

	1965	1964
brought forward .....	\$414,602,900	\$420,413,400
<b>Sinking Fund Debentures:</b>		
5¾% Series A due 1 April 1977, after deducting debentures redeemed in accordance with sinking fund requirements .....	37,200,000	37,200,000
<i>Issued by British Columbia Power Commission –</i>		
<b>Bonds:</b>		
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*
3¾% Series H due 15 July 1989 .....	6,300,000*	6,300,000*
3¾% Series J due 4 July 1975 .....	10,000,000	10,000,000
5% Series MB due 15 September 1964 .....	—	3,231,000
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
3⅝% Series T due 1 April 1977 (payable in Canadian or United States funds at option of holder) .....	9,285,000	9,285,000
<b>Debentures:</b>		
3¾% Series K due 15 June 1986 .....	20,000,000*	20,000,000*
4⅝% Series L due 15 April 1987 .....	25,000,000*	25,000,000*
3⅞% Series P due 1 February 1988 .....	20,000,000*	20,000,000*
4⅞% Series U due 15 July 1964 .....	—	4,000,000*
<i>Issued by British Columbia Hydro and Power Authority –</i>		
<b>Bonds:</b>		
5¼% Series A due 1 May 1982 .....	32,496,300	32,496,300
3¾% 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	—
5¼% Series M due 15 December 1994 .....	20,000,000	—
5¼% Series N due 15 March 1995 .....	10,000,000	—
carried forward .....	\$790,995,200	\$764,036,700

## NOTES TO FINANCIAL STATEMENTS AS AT 31 MARCH 1965 (continued)

## NOTE 2 - LONG TERM DEBT (continued)

	1965	1964
brought forward.....	\$790,995,200	\$764,036,700
Less -		
Exchange discount incurred on long term debt payable in United States funds.....	2,554,614	2,722,973
	<u>788,440,586</u>	<u>761,313,727</u>
Add -		
Provision for loss on exchange, since date of issue, on long term debt maturing in July 1964, payable in United States funds.....	—	491,250
	<u>788,440,586</u>	<u>761,804,977</u>
Less -		
Sinking funds on deposit with Trustee, Minister of Finance of the Province of British Columbia.....	35,963,758	29,838,074
	<u>\$752,476,828</u>	<u>\$731,966,903</u>
Classification on balance sheet -		
Long term debt.....	\$739,908,956	\$712,451,395
Long term debt payments due within one year, included in current and accrued liabilities -		
Sinking fund instalments.....	12,567,872	11,959,508
Debt maturities.....	—	7,556,000
	<u>\$752,476,828</u>	<u>\$731,966,903</u>

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

## 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 - INTEREST:

Included in interest and other costs on debt is \$1,651,074 for amortization of discount and expense on long term debt and parity development bonds, and a deduction of \$1,563,007 for income received on sinking fund investments.

## NOTE 5 - TAXES ON INCOME:

The liability for taxes on income amounting to \$3,737,587 represents the estimated taxes payable in respect of British Columbia Electric Company Limited and its wholly-owned subsidiary British Columbia Electric Railway Company Limited. The tax returns of these companies have been assessed, but appeals have been filed against some of the assessments. Accordingly, the provision for taxes on income, while deemed adequate, is subject to change but no adjustment will be made until all final assessments have been received and agreed.

## NOTE 6 - COLUMBIA RIVER TREATY:

The Treaty between Canada and the United States of America relating to the co-operative development of the water resources of the Columbia River Basin was ratified by both governments on 16 September 1964. Pursuant thereto and to related documents, British Columbia Hydro and Power Authority was designated as the Canadian entity under the terms of the Treaty and the Authority is required to construct three storage dams - Duncan, Arrow and Mica. Canada's entitlement to half the increased power generation

NOTE 6 – COLUMBIA RIVER TREATY (continued)

in the United States resulting from the construction of the three dams has been sold to the Columbia Storage Power Exchange for periods of thirty 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 and this amount was transferred to the Authority on 16 September 1964.

As the storages are completed, 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 the storages are not completed so as to become 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 projects.

The sum of \$273,291,661 mentioned above, which with interest had increased to \$281,076,684 as at 31 March 1965, was applied as follows:

Investments and accrued interest:	
Province of Quebec 5.05% notes maturing at varying dates to 15 October 1968 .....	\$100,000,000
Bank of Montreal special fixed deposits at 5.40% maturing at varying dates to 16 September 1968.....	69,475,000
Kinross Mortgage Corporation 5.67% notes maturing at varying dates to 18 September 1967 – guaranteed by Canadian Imperial Bank of Commerce .....	50,000,000
Pacific Great Eastern Railway Company, 5% short term notes .....	4,000,000
Sundry .....	4,123
Accrued interest receivable .....	588,856
	<u>224,067,979</u>
Funds temporarily advanced to the Authority for general purposes with interest at 5%.....	32,324,270
	<u>256,392,249</u>
Expenditures on Columbia River Development to 31 March 1965, including interest during construction.....	24,684,435
	<u>\$281,076,684</u>

NOTE 7 – STABILIZATION OF RATES AND CONTINGENCY RESERVE:

Balance as at 31 March 1964 .....	\$ 30,771,139
Net income for the year ended 31 March 1965.....	13,162,522
Balance as at 31 March 1965 .....	<u>\$ 43,933,661</u>

NOTE 8 – COMMITMENTS:

Commitments and contracts of the Authority for capital projects and inventories of materials and supplies aggregated approximately \$212,000,000 as at 31 March 1965.

## FINANCIAL STATISTICS

(in millions of dollars)

	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956
<b>SOURCES OF REVENUE</b>										
Electric – residential .....	40.6	38.5	37.4	40.0	38.2	36.4	33.0	28.7	26.3	23.3
– other .....	60.4	54.8	55.1	50.3	46.6	44.1	39.1	33.1	29.0	25.9
Gas .....	30.0	25.7	24.6	22.5	19.7	17.0	12.2	8.1	5.9	5.3
Passenger transportation .....	14.5	13.8	13.9	13.4	13.9	14.6	14.3	13.9	13.7	13.4
Rail freight .....	5.9	5.6	5.3	5.0	4.8	4.9	5.1	4.9	5.2	4.5
Miscellaneous .....	1.9	1.2	1.4	2.1	3.0	2.2	1.8	2.3	1.5	1.5
Total .....	153.3	139.6	137.7	133.3	126.2	119.2	105.5	91.0	81.6	73.9
<b>DISPOSITION OF REVENUE</b>										
Employment costs, materials and services .....	59.9	54.5	51.7	47.9	46.1	45.6	40.4	39.0	35.1	32.0
Grants, school taxes, etc. ....	9.9	9.1	8.4	7.1	6.8	6.2	5.5	4.6	3.9	3.5
Provision for depreciation .....	27.1	25.3	22.8	21.8	20.7	18.9	17.0	13.6	11.1	10.2
Taxes on income .....	—	—	—	2.8	12.0	11.8	9.2	7.6	9.3	8.8
Interest and other costs on debt .....	47.7	44.7	43.5	35.8	28.4	25.0	21.7	17.8	11.1	8.8
Interest charged to construction (deduct) .....	(4.5)	(2.8)	(2.7)	(3.3)	(3.1)	(4.7)	(4.9)	(4.6)	(3.5)	(1.7)
Dividends on preferred shares .....	—	—	—	1.7	5.0	5.0	5.0	4.4	3.8	3.5
Dividends on common shares .....	—	—	—	1.9	8.1	7.2	6.3	5.8	5.3	4.2
Employed in the business .....	13.2	8.8	14.0	17.6	2.2	4.2	5.3	2.8	5.5	4.6
Total .....	153.3	139.6	137.7	133.3	126.2	119.2	105.5	91.0	81.6	73.9
<b>EXPENDITURES ON PLANT .....</b>										
	105.3	70.6	54.2	57.1	64.3	81.0	98.8	157.1	151.3	65.8

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 British Columbia Electric Company Limited and British Columbia Power Commission have been combined.

## OPERATING STATISTICS

	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956
<b>ELECTRIC</b>										
Generating capacity at year-end (rated kw in thousands) (1)										
Hydro.....	1,306	1,295	1,295	1,295	1,296	1,172	1,023	987	799	692
Thermal.....	588	571	570	268	268	253	110	84	57	46
Total.....	1,894	1,866	1,865	1,563	1,564	1,425	1,133	1,071	856	738
Peak one-hour demand, integrated system (kw in thousands).....	1,490	1,244	1,169	1,154	1,083	1,064	1,020	885	815	709
Customers at year-end (in thousands).....	503	478	459	443	432	420	403	385	366	344
Electricity sold to public (kwh)										
Total (in millions).....	7,345	6,431	6,059	5,540	5,149	4,934	4,471	3,769	3,261	2,984
Increase over previous year (%).....	14.2	6.1	9.4	7.6	4.4	10.4	18.6	15.6	9.3	9.9
By class of customer (%)										
Residential.....	31	32	32	33	33	33	33	36	38	36
Other systems (largely residential).....	2	2	2	1	2	2	2	2	2	2
Commercial, industrial, etc.....	67	66	66	66	65	65	65	62	60	60
Export (2).....	—	—	—	—	—	—	—	—	—	2
Residential service										
Average annual kwh use per customer.....	5,486	5,200	5,029	4,829	4,723	4,658	4,455	4,240	4,092	3,798
Average revenue per kwh (cents).....	1.8	1.8	1.9	2.2	2.2	2.2	2.2	2.1	2.1	2.2
(1) Excludes electricity available from other systems. Rated capacity has been exceeded on occasion.										
(2) Less than ½ of 1% 1957 through 1965.										
<b>GAS</b>										
One-day capacity at year-end (therms in thousands)										
Mainland - firm pipeline contracts (3).....	1,900	1,780	1,780	1,780	1,540	1,000	575	575	400	—
- plant.....	250	250	250	250	320	320	190	190	160	101
Greater Victoria - plant.....	36	36	36	36	27	27	27	27	18	18
Peak one-day demand (therms in thousands)										
Mainland system - including interruptible.....	2,341	1,359	1,580	1,287	934	828	728	330	185	90
- excluding interruptible.....	1,849	1,060	1,342	1,081	733	690	663	288	180	90
Greater Victoria system.....	23	16	18	21	13	16	15	13	14	13
Customers at year-end (in thousands).....	153	145	137	129	120	111	96	79	63	60
Gas sold to public (therms)										
Total (in millions).....	306	260	240	217	186	157	103	62	30	21
Increase over previous year (%).....	17.7	8.6	10.4	16.7	18.5	52.1	66.4	105.5	43.0	9.8
Average revenue per therm (cents).....	9.8	9.9	10.3	10.2	10.6	10.8	11.8	13.0	19.4	25.1
(3) On basis of 100 cu. ft. to one therm.										
<b>PASSENGER TRANSPORTATION</b>										
Vehicles at year-end										
Urban - buses.....	336	339	334	332	342	341	346	340	323	325
- trolley coaches.....	296	312	317	327	327	351	351	351	351	327
- total.....	632	651	651	659	669	692	697	691	674	652
Interurban rail passenger cars.....	—	—	—	—	—	—	—	—	11	17
Interurban buses.....	70	80	81	75	71	67	69	69	69	71
Passengers carried (in millions)										
Urban.....	73.1	75.8	77.3	78.3	82.4	89.3	98.4	102.9	100.9	99.8
Interurban rail.....	—	—	—	—	—	—	—	.8	1.0	1.1
Interurban bus.....	2.0	2.3	2.5	2.5	2.6	2.7	3.1	3.3	3.4	3.4
Revenue miles run - urban (in millions).....	20.5	20.5	20.5	20.6	21.7	22.6	23.6	23.3	23.1	23.6
Passenger revenue per mile - urban (cents).....	57.7	52.8	54.0	54.2	54.3	56.5	52.4	51.1	50.5	48.8
<b>RAIL FREIGHT</b> (tons in thousands).....	1,832	1,663	1,567	1,527	1,427	1,359	1,276	1,314	1,617	1,431
<b>EMPLOYEES AT YEAR-END</b>										
Regular.....	6,006	5,761	5,641	5,804	5,919	6,053	6,263	6,538	- not available -	
Temporary.....	418	451	328	292	323	340	487	802	- not available -	
Total.....	6,424	6,212	5,969	6,096	6,242	6,393	6,750	7,340	6,933	5,936

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 British Columbia Electric Company Limited and British Columbia Power Commission have been combined.

## MAP OF ELECTRIC TRANSMISSION SYSTEM

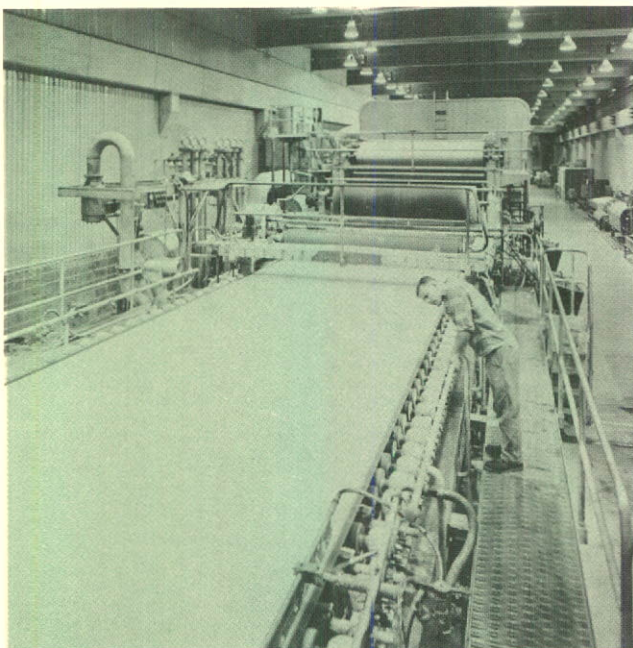
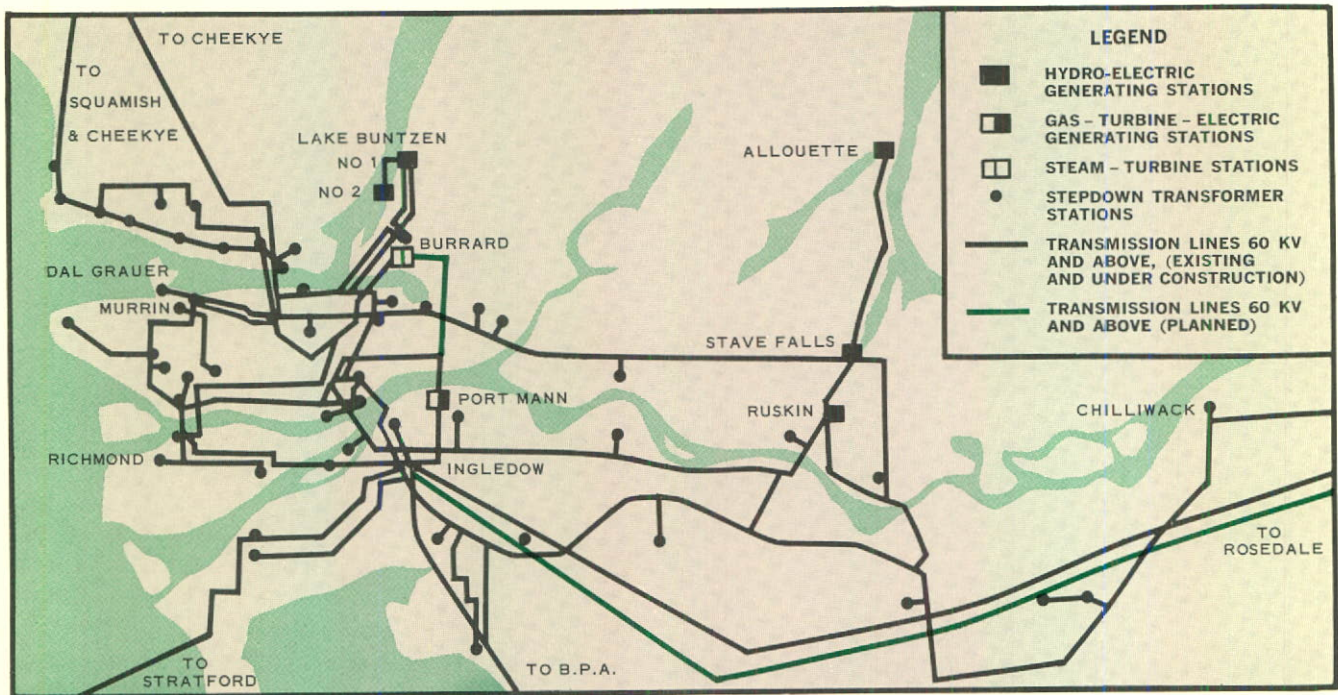
The map, opposite, shows the Authority's transmission lines –

- (a) now operating or under construction (blue lines), and
- (b) planned for construction in the next five years (red lines).

The transmission network, with its planned extensions, will bring electric service to all but the remotest areas now without electricity in British Columbia and will eventually integrate existing isolated electric supply systems into a single reliable "grid".

The map does not show the many thousands of miles of distribution lines, including rural extensions, in the Authority's service areas.

The transmission system in the Greater Vancouver area is shown in the enlarged map below:



◀ The Island Paper Mills plant on Annacis Island, where the paper on which this report is printed was manufactured. Island Paper Mills is a Division of MacMillan, Bloedel and Powell River Limited.

# BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

## ELECTRIC TRANSMISSION SYSTEM 1965 – WITH PLANNED ADDITIONS





ABOVE: One of the modern buses of Pacific Stage Lines, a department of British Columbia Hydro and Power Authority, operating interurban, charter and sightseeing services, including conducted tours to the Peace River Project.

RIGHT: Sixteen new 45-passenger diesel buses were added to the Authority's urban transportation fleet in 1964. Another 65 buses have been ordered for service in Greater Vancouver and Victoria, to be delivered in 1965.

