PROVINCE OF BRITISH COLUMBIA

FIFTH ANNUAL REPORT

OF THE

BRITISH COLUMBIA POWER COMMISSION

FOR THE YEAR ENDED MARCH 31st

1950

VICTORIA, B.C.:
Printed by DON MCDIARMID, Printer to the King's Most Excellent Majesty.
1950.

To Lieutenant-Colonel the Honourable CHARLES ARTHUR BANKS, C.M.G.,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Annual Report of the British Columbia Power Commission for the fiscal year ended March 31st, 1950.

BYRON I. JOHNSON,
Premier.

Victoria, B.C.,
June 30th, 1950.

The Honourable Byron I. Johnson, M.B.E.,
Premier, Parliament Buildings, Victoria, B.C.

SIR,—The Annual Report of the British Columbia Power Commission, covering the fiscal year 1949–50, is respectfully submitted herewith in accordance with section 93 of the "Electric Power Act."

We have the honour to be,
Sir,
Your obedient servants,

F. L. SHAW,
Commissioner.
W. W. FOSTER,
Commissioner.
S. R. WESTON,
Chairman.

Victoria, B.C.,
June 15th, 1950.

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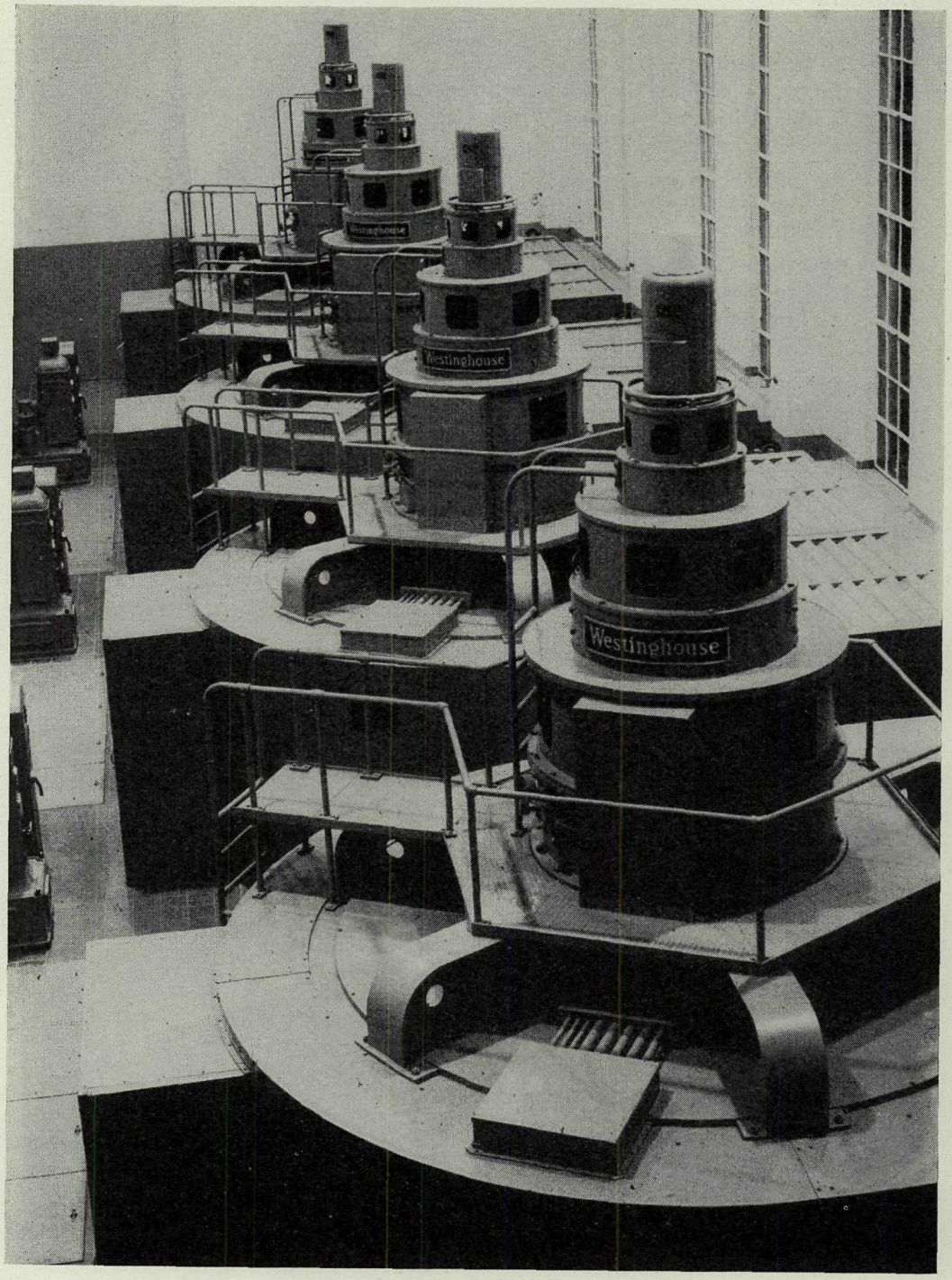
JOHN HART DEVELOPMENT.

FOUR GENERATORS REPRESENT 112,000 HORSE-POWER.



Second phase of construction of the John Hart Development at Campbell River, Vancouver Island, was completed during the 1949–50 fiscal year. Interior of the power-house, shown here, contains four Westinghouse turbo-generators, each of 28,000 horse-power installed capacity.

Fifth Annual Report of the British Columbia Power Commission, Fiscal Year ended March 31st, 1950.

I. GENERAL REVIEW.

The British Columbia Power Commission had been in existence for nearly five years by the end of the fiscal year, having been appointed April 17th, 1945. Actual operations, however, were not commenced until August 1st, 1945, so that a record of five complete years of progress will only be available after next year.

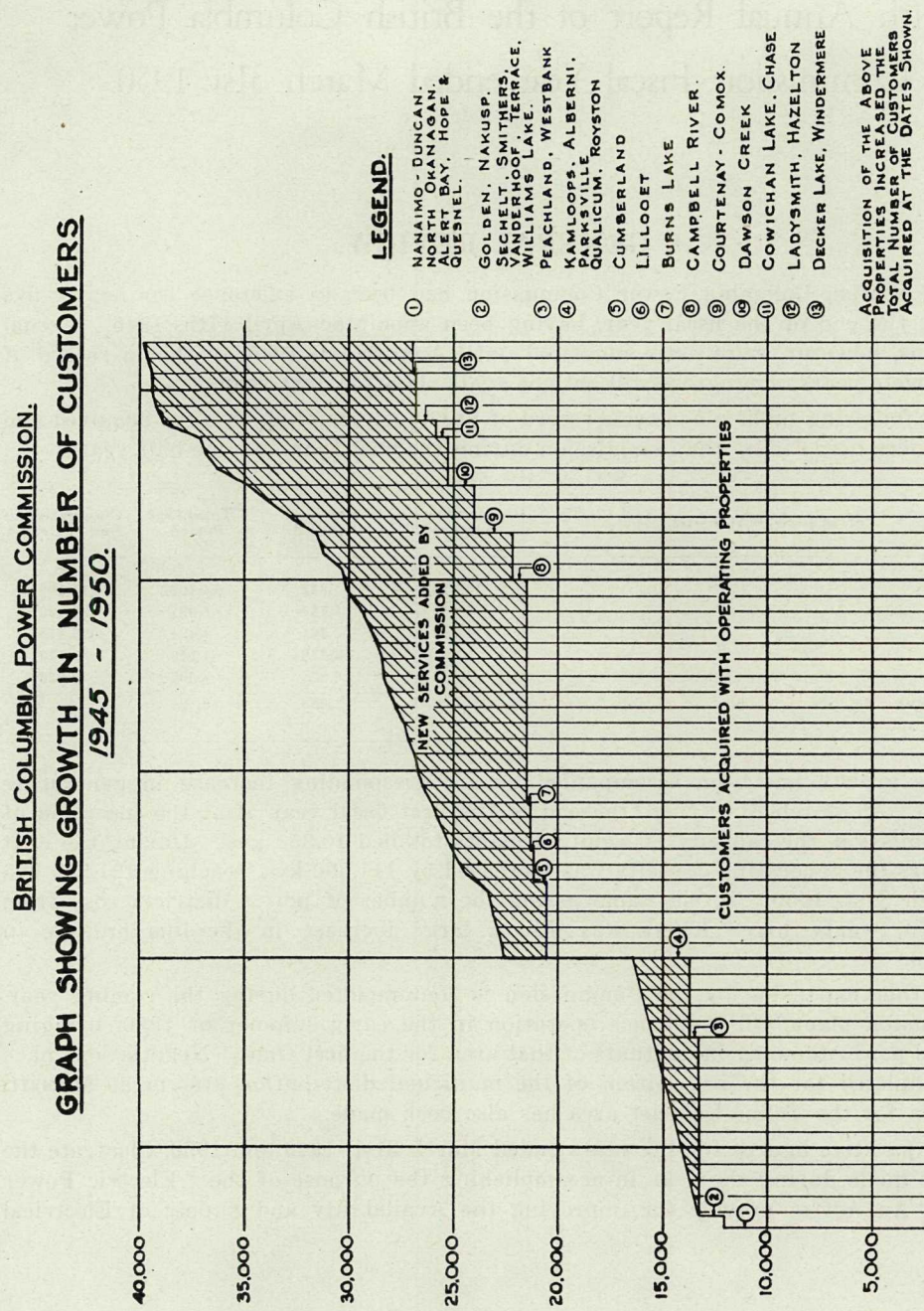
The following table is a concise record of previously existing services acquired and new services installed by the Commission during the past four and one-half years:—

Period ended March 31st.	Services acquired.	Services installed.	Total for Period.	Cumulative to End of Period.
1946	13,270	832	14,102	14,102
1947	7,151	1,786	8,937	23,039
1948	1,000	3,431	4,431	27,470
1949	831	3,318	4,149	31,619
1950	4,686	3,321	8,007	39,626
Totals	26,938	12,688	39,626	.....

This growth has been accompanied by a corresponding increase in generating capacity. At March 31st, 1946, the end of the first fiscal year after the inception of the Commission, the capacity of acquired plants totalled 10,355 kva. During the next four years the generating capacity was increased by 111,500 kva, reaching 121,855 kva by March 31st, 1950. In the same period the number of power districts rose from twelve to twenty-three. There was also a large increase in the line mileage in operation.

Further expansion by the Commission is contemplated during the coming year. The Houston plant will commence operation in the early summer of 1950, bringing electrical power to many inhabitants of that area for the first time. Negotiations have been completed for the acquisition of the municipal distribution system at Merritt. Provision for the Tofino-Ucluelet area has also been made.

Comparative figures for the years ended March 31st, 1949 and 1950, illustrate the progress made during the year in accomplishing the purpose of the "Electric Power Act"—"An Act to provide for improving the Availability and Supply of Electrical Power."


BRITISH COLUMBIA POWER COMMISSION.
GRAPH SHOWING GROWTH IN NUMBER OF CUSTOMERS
1945 - 1950.
LEGEND.
① NANAIMO - DUNCAN. NORTH OKANAGAN. ALERT BAY, HOPE & QUESNEL.
② GOLDEN, NAKUSP. SECHELT, SMITHERS, VANDERHOOF, TERRACE, WILLIAMS LAKE.
③ PEACHLAND, WESTBANK
④ KAMLOOPS, ALBERNI, PARKSVILLE QUALICUM, ROYSTON
⑤ CUMBERLAND
⑥ LILLOOET
⑦ BURNS LAKE
⑧ CAMPBELL RIVER.
⑨ COURTENAY - COMOX.
⑩ DAWSON CREEK
⑪ COWICHAN LAKE, CHASE
⑫ LADYSMITH, HAZELTON
⑬ DECKER LAKE, WINDERMERE
ACQUISITION OF THE ABOVE PROPERTIES INCREASED THE TOTAL NUMBER OF CUSTOMERS ACQUIRED AT THE DATES SHOWN.
NEW SERVICES ADDED BY COMMISSION
CUSTOMERS ACQUIRED WITH OPERATING PROPERTIES
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
1945
1946
1947
1948
1949
1950

	Year ended March 31st, 1949.	Year ended March 31st, 1950.
Number of generating units in operation	58	62
Generating capacity ..... kva	69,583	121,855
Transmission-line (over 23 kv) ..... miles	285	365
Primary distribution circuits ..... miles	1,389	1,958
Number of power districts in operation	19	23
Kwh generated or purchased	132,685,512	168,683,738
Number of customers—		
Residential	25,991	32,688
Commercial	4,911	6,070
Power	677	816
Street-lighting	40	52
Total number of customers	31,619	39,626
Average monthly consumption—		
Residential customers ..... kwh	96	110
Commercial customers ..... kwh	382	420
Power customers ..... kwh	3,294	3,347
Average charge per kwh paid by—		
Residential customers	4.0c.	3.6c.
Commercial customers	3.7c.	3.6c.
Power customers	1.7c.	1.7c.
Revenue—		
Power districts—		
Electrical-energy sales	$2,404,671.87	$3,080,389.22
Miscellaneous	26,636.59	31,190.75
	$2,431,308.46	$3,111,579.97
Special-contract sales	118,954.82	155,889.18
	$2,550,263.28	$3,267,469.15
Operating expenses—		
Labour	$416,672.97	$446,636.49
Fuel	216,549.44	298,762.52
Other direct operating expenses	110,351.41	118,063.93
Customer accounting and collecting	157,311.86	177,764.18
3-per-cent. gross revenue assessment	71,044.90	91,796.70
Administration and general expense	155,928.48	170,293.51
Purchased power	35,427.03	93,377.51
	$1,163,286.09	$1,396,694.84
Interest on capital in operation	517,720.32	670,814.45
Total direct expenses	$1,681,006.41	$2,067,509.29
Operating surplus (excluding provision for reserves)	$869,256.87	$1,199,959.86
Provision for reserves—		
Maintenance and renewals	$418,323.58	$554,416.69
Sinking fund	258,860.74	335,406.29
Contingencies	154,769.86	157,484.88
	$831,954.18	$1,047,307.86
Net operating surplus (transferred to Stabilization Reserve)	$37,302.69	$152,652.00

While the expansion of the Commission's operations as a whole has been significant, the striking improvement experienced in many of the smaller areas during the past four years is only apparent from an examination of results by individual power districts. The table "Statistics relating to the Supply of Electrical Energy" details the progress achieved in reducing the average charge per kwh and increasing the consumption per customer in each power district during the past four years. Nineteen out of the present twenty-three power districts are now operating under the uniform rate structures introduced by the Commission late in 1946.

Although the net operating surplus is considerably greater than last year, the ravages of British Columbia's most severe winter on record had a serious effect on both revenues and expenditures. In January, 1950, freezing of the water-flume supplying the Barriere hydro-plant caused its complete shut-down. Practically at the same time, power production at the Shuswap Falls plant was seriously curtailed by the burning-out of the No. 1 generator, the result of a transmission-line disturbance indirectly attributable to winter conditions.

With hydro-power production thus impaired, increased production at the more costly Kamloops steam plant was called for in an endeavour to meet consumer demands. Despite this and the purchase of power from West Kootenay Power and Light Company, Limited, the total supply was still insufficient and costly. Accordingly, it became necessary to restrict the supply of power in both the North Okanagan and Kamloops Districts, with a resultant loss of revenue. To these various factors must be added the heavy increase in line-maintenance costs. Had it not been for the cumulative effect of these conditions, the net operating surplus would have been appreciably greater.

In the coming fiscal year, heavy carrying charges on the Ladore Dam and other parts of the John Hart Development will be levied against operations for the first time. This, together with considerable capital additions in various sections of the Province which will not produce, by March 31st, 1951, a proportionate increase in revenue, may be expected to result in a much reduced operating surplus for the year ending on that date.

During the year the second stage of the John Hart Development was officially declared completed in October by Premier Johnson, thus increasing its capacity by 56,000 to a total of 112,000 horse-power.

Good progress was made at the Whatshan Development during the winter, with the driving-through of the 12,500-foot-long tunnel occurring shortly after the end of the fiscal year. The first of two 33,000-horsepower stages is expected to be in operation by the end of 1950. This source of power will supply the North Okanagan and Kamloops areas, allowing present uneconomical plants to be closed down. It will also provide power for any communities in the Arrow Lake Valley in which it may be economically feasible to construct distribution facilities.

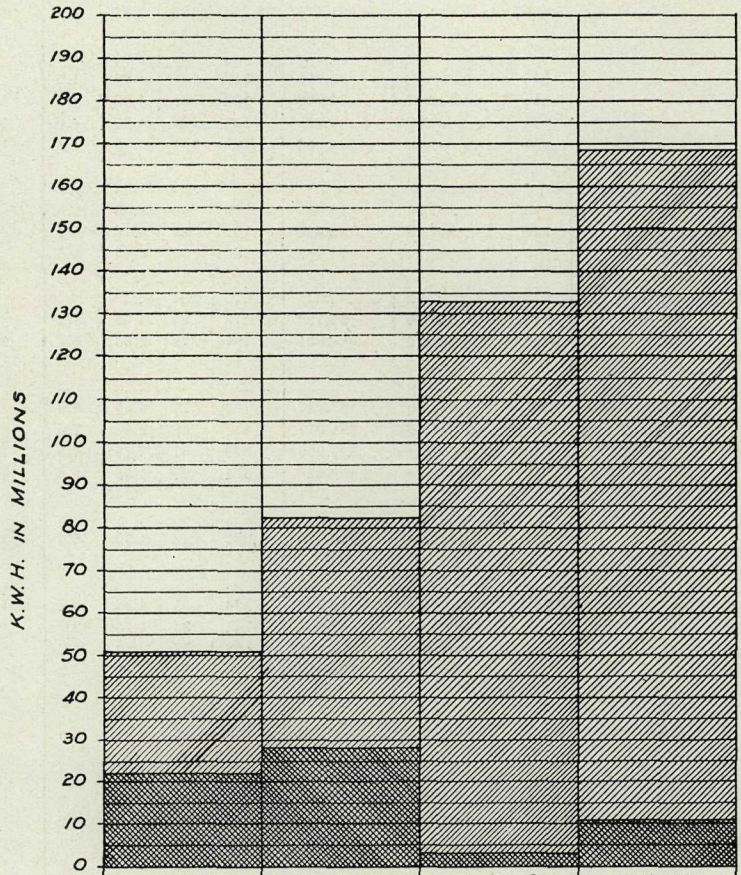
Initial survey work on the Quesnel River was made in the summer of 1949, indicating a potentiality of some 400,000 horse-power.

Plans for an administrative building in Victoria were completed during the year, and construction commenced. These offices should be completed late in 1950, at which time the administrative staff will move into permanent quarters.

This Fifth Annual Report describes in detail the year's activities under functional headings—Legal, Construction, Operation, Surveys and Investigations, and Financial.

BRITISH COLUMBIA POWER COMMISSION

GRAPHIC REPRESENTATION OF TOTAL YEARLY PRODUCTION OF ELECTRICAL ENERGY FOR THE 4 YEAR PERIOD 1946-1950, SHOWING PROPORTIONS PRODUCED BY COMMISSION PLANTS AND PURCHASED POWER.



	1946-47	1947-48	1948-49	1949-50
K.W.H. GENERATED	28,667,919	54,301,630	129,464,276	157,946,073
K.W.H. PURCHASED	22,283,930	28,231,710	3,221,236	10,737,665
TOTALS	50,951,849	82,533,340	132,685,512	168,683,738

LEGEND: Generated / Purchased

Power District.	Fiscal Year ended Mar. 31.	Residential Service.						Commercial	
		Revenue.	Consumption.	Number of Customers.	Av. Monthly Consumption.	Av. Monthly Bill.	Revenue per Kwh.	Revenue.	Consumption.
		$	Kwh.		Kwh.	$	c.	$	Kwh.
The Albernis	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	29,556.13	662,644	2,474	90	4.00	4.5	18,405.25	530,739
	1948	122,940.07	2,907,171	2,938	90	3.80	4.2	77,132.03	2,010,020
	1949	136,368.13	3,765,710	3,208	102	3.70	3.6	81,429.61	2,901,691
	1950	147,834.51	4,961,178	3,354	125	3.75	3.0	83,036.08	3,218,867
Alert Bay	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	5,858.78	53,000	110	43	4.70	11.0	9,219.72	119,000
	1948	6,848.87	96,520	132	68	4.85	7.1	10,076.96	199,110
	1949	8,896.85	194,099	169	108	4.95	4.6	10,817.20	356,670
	1950	11,880.90	312,594	179	151	5.75	3.8	10,458.64	319,851
Burns Lake	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1948	2,567.51	14,650	66	48	8.35	17.5	2,488.95	17,195
	1949	5,917.23	32,646	109	34	6.15	18.1	7,293.14	49,924
	1950	5,102.24	77,432	186	53	3.45	6.6	7,367.02	174,199
Campbell River	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1949	6,543.76	91,199	713	64	4.60	7.2	4,812.59	75,319
	1950	36,238.20	668,051	794	72	3.95	5.4	24,327.20	563,367
Comox Valley	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	1,255.30	21,247	93	76	4.50	5.9	.....	.....
	1948	28,846.60	381,012	837	45	3.40	7.6	9,409.21	221,106
	1949	37,677.14	521,950	860	51	3.70	7.2	11,632.05	270,818
	1950	108,602.24	2,059,626	2,371	77	4.05	5.3	59,351.00	1,548,844
Dawson Creek	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1950	37,671.29	576,005	1,031	72	4.70	6.5	53,373.83	839,652
Golden	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	6,275.26	44,200	124	31	4.35	14.2	7,513.21	74,000
	1948	6,855.41	53,994	141	34	4.30	12.7	8,488.36	98,407
	1949	6,846.84	102,008	158	57	3.80	6.7	8,098.93	210,186
	1950	8,692.40	168,454	173	84	4.35	5.2	9,876.01	290,431
Hazelton	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1950	1,676.35	33,625	109	89	4.45	5.0	1,490.47	31,659
Hope	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	11,103.42	107,300	269	37	3.80	10.3	10,076.62	141,300
	1948	11,470.01	184,792	342	51	3.20	6.2	12,647.95	291,137
	1949	16,558.16	349,212	398	78	3.70	4.7	15,721.28	497,161
	1950	20,696.73	544,149	468	102	3.90	3.8	17,673.17	579,248
Kamloops	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	29,586.47	835,165	2,354	118	4.25	3.6	34,612.54	656,614
	1948	113,315.36	3,176,827	2,588	107	3.80	3.6	136,481.20	2,647,482
	1949	124,136.04	3,717,417	2,778	116	3.85	3.3	157,761.03	3,034,725
	1950	148,675.32	4,512,023	3,257	124	4.10	3.3	189,534.87	3,815,925
Lake Cowichan	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1950	9,645.54	111,310	412	54	4.70	8.7	8,351.60	110,564
Lake Windermere	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lillooet	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1948	3,643.72	46,091	82	68	5.35	7.9	3,872.34	109,177
	1949	5,782.38	83,536	81	83	5.75	6.9	6,714.59	192,801
	1950	7,769.87	98,745	150	70	5.50	7.9	8,205.45	248,445
Nakusp	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	7,952.72	75,000	217	30	3.20	10.6	3,804.34	48,400
	1948	9,347.76	99,211	230	37	3.45	9.4	5,317.30	79,093
	1949	11,278.30	203,261	272	66	3.65	5.5	5,399.76	129,445
	1950	13,435.91	288,992	285	86	4.00	4.7	6,761.13	168,762

* Denotes total number of customers at respective dates of acquisition.

NOTE.—The average monthly consumption and the average monthly bill are based on the average number of customers for the whole year rather than on the actual number shown, which is at the end of the fiscal year.

SUPPLY OF ELECTRICAL ENERGY.

Service.				Power Service.				Street-Lighting Service.			Totals.			
Number of Customers.	Av. Monthly Consumption.	Av. Monthly Bill.	Revenue per Kwh.	Revenue.	Consumption.	Number of Customers.	Revenue per Kwh.	Revenue.	Consumption.	Number of Customers.	Revenue.	Consumption.	Number of Customers.	Revenue per Kwh.
	Kwh.	$	c.	$	Kwh.		c.	$	Kwh.		$	Kwh.		c.
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Jan. 1, 1947.)				2,877	.....
427	425	14.70	3.5	3,456.37	32,633	40	10.6	1,732.96	26,148	2	53,150.71	1,252,164	2,943	4.2
484	365	14.00	3.8	15,913.73	431,583	40	3.7	6,776.41	134,571	2	222,762.24	5,483,345	3,464	4.1
534	472	13.25	2.8	24,387.59	1,028,897	46	2.4	6,376.81	154,383	2	248,562.14	7,850.681	3,790	3.2
526	509	13.10	2.6	31,175.68	1,944,961	52	1.6	7,284.06	173,894	2	269,330.33	10,298,900	3,934	2.6
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Aug. 1, 1945.)				152	.....
55	180	13.95	7.7	3,734.55	73,700	25	5.1	180.00	3,600	1	18,993.05	249,300	191	7.6
65	274	13.80	5.1	2,610.06	54,640	7	4.8	134.00	300	1	19,669.89	350,570	205	5.6
75	409	12.40	3.0	1,547.41	54,202	8	2.9	169.02	3,800	3	21,430.48	608,771	255	3.5
78	344	11.25	3.3	3,638.55	173,343	10	2.1	750.15	28,796	2	26,728.24	834,584	269	3.2
.....	.....	.....	.....	.....	(Date of acquisition: Burns Lake, Nov. 1, 1947; Decker Lake, Feb. 15, 1950.)								116*	.....
28	126	18.30	14.5	392.85	2,803	4	14.0	125.00	3,872	1	5,574.31	38,520	99	14.5
36	130	19.00	14.6	1,675.04	18,801	8	8.9	362.98	17,544	1	15,248.39	118,915	154	12.8
70	255	10.80	4.2	912.12	47,738	5	1.9	618.16	22,301	1	13,999.54	321,670	262	4.4
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Jan. 1, 1949.)				831	.....
120	311	19.90	6.4	944.98	26,896	3	3.5	77.65	1,553	1	12,378.98	194,967	837	6.3
151	324	14.00	4.3	5,745.58	163,895	9	3.5	671.54	27,019	2	66,982.52	1,422,332	956	4.7
.....	(Date of acquisition: Royston, Jan. 1, 1947; Cumberland, June 5, 1947; Courtenay-Comox, Apr. 1, 1949.)												2,593*	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	1,255.30	21,247	93	5.9
75	295	12.50	4.3	2,021.40	78,362	2	2.6	1,422.52	40,175	2	41,699.73	720,655	916	5.8
75	298	12.80	4.3	2,547.31	95,115	3	2.7	2,598.61	77,731	2	54,455.11	965,614	940	5.6
352	395	15.15	3.8	10,727.61	373,740	43	2.9	7,040.13	211,374	4	185,720.98	4,193,584	2,770	4.4
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: June, 30, 1949.)				1,278	.....
284	370	23.50	6.4	25,294.65	455,775	38	5.6	2,576.25	36,968	2	118,916.02	1,908,400	1,355	6.3
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Sept. 1, 1945.)				158	.....
46	135	13.75	10.2	861.04	8,700	7	9.9	954.60	25,000	....	15,604.11	151,900	177	10.2
54	162	14.00	8.6	745.06	5,914	6	12.6	500.45	.....	....	16,589.28	158,315	201	10.5
54	317	12.25	3.9	417.82	5,631	5	7.4	796.76	33,104	1	16,160.35	350,929	218	4.6
62	428	14.55	3.4	510.46	7,940	6	6.4	1,302.00	41,899	1	20,380.87	508,724	242	4.0
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Nov. 1, 1949.)				68	.....
41	204	9.60	4.7	643.48	26,128	1	2.5	.....	.....	....	3,810.30	91,412	151	4.2
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Aug. 1, 1945.)				190	.....
48	284	20.20	7.1	252.60	4,800	4	5.3	286.00	27,676	1	21,718.64	281,076	322	7.7
84	316	13.75	4.4	195.04	5,437	2	3.6	749.00	27,867	1	25,062.00	509,233	429	4.9
91	436	13.80	3.2	1,678.91	75,516	4	2.2	1,110.00	52,680	1	35,068.35	974,569	494	3.6
117	440	13.40	3.1	3,814.88	200,091	8	1.9	1,190.50	54,195	1	43,375.28	1,377,683	594	3.1
.....	.....	.....	.....	.....	(Date of acquisition: Kamloops, Jan. 1, 1947; Chase, Sept. 30, 1949.)								3,101*	.....
609	392	20.60	5.3	11,258.70	452,823	116	2.5	1,553.75	62,870	1	77,011.46	2,007,472	3,080	3.9
650	335	18.25	5.2	72,421.50	3,473,306	120	2.1	4,809.85	199,320	1	327,027.91	9,496,935	3,359	3.5
710	363	18.90	5.2	70,700.45	3,164,181	118	2.2	4,772.75	197,149	1	357,370.27	10,113,472	3,607	3.5
779	423	21.00	5.0	99,468.88	4,723,241	118	2.1	3,687.81	170,104	2	441,366.88	13,221,293	4,156	3.3
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Sept. 30, 1949.)				467	.....
72	287	23.35	7.6	16.00	9	1	.....	89.76	2,992	1	18,102.90	224,875	486	8.0
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Jan. 31, 1950.)				104	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Aug. 1, 1947.)				135	.....
45	316	11.20	3.5	781.38	13,545	14	5.8	.....	.....	....	8,297.44	168,813	141	4.9
40	358	12.45	3.5	1,696.03	33,621	14	5.0	.....	.....	....	14,193.00	309,958	135	4.6
45	471	15.55	3.3	2,166.62	83,936	15	2.6	351.40	15,960	1	18,493.34	447,086	211	4.2
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Sept. 1, 1945.)				250	.....
52	76	6.00	7.9	529.68	7,500	12	7.1	.....	.....	....	12,286.74	130,900	281	9.4
65	114	7.70	6.7	383.11	2,440	5	15.7	.....	.....	....	15,048.17	180,744	300	8.4
65	167	7.00	4.2	361.70	5,195	8	7.0	301.79	6,314	1	17,341.55	344,215	346	5.0
68	211	8.45	4.0	421.08	6,860	7	6.1	360.00	7,690	1	20,978.12	472,304	361	4.5

STATISTICS RELATING TO THE SUPPLY

Power District.	Fiscal Year ended Mar. 31.	Residential Service.						Commercial	
		Revenue.	Consumption.	Number of Customers.	Av. Monthly Consumption.	Av. Monthly Bill.	Revenue per Kwh.	Revenue.	Consumption.
		$	Kwh.		Kwh.	$	c.	$	Kwh.
Nanaimo-Duncan	.....	.....	.....	.....	.....	.....	(Date of acquisition:	Nanaimo-	
	1947	299,777.93	5,933,381	7,477	72	3.65	5.1	140,757.69	3,506,220
	1948	378,033.10	7,839,393	8,278	83	4.00	4.8	188,970.81	4,394,887
	1949	377,682.07	9,802,055	9,102	94	3.60	3.8	230,543.15	7,473,774
	1950	439,755.84	13,787,333	10,696	116	3.70	3.2	269,599.68	9,910,654
North Okanagan	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	173,236.77	4,169,895	4,167	87	3.60	4.2	112,465.09	2,715,790
	1948	203,025.85	5,242,519	4,791	97	3.75	3.9	133,269.83	3,107,124
	1949	256,731.80	7,034,583	5,660	111	4.05	3.6	158,666.22	3,772,011
	1950	315,280.21	9,163,547	6,296	125	4.30	3.4	170,180.39	3,937,094
Peachland-Westbank	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	5,984.54	68,059	244	36	3.15	8.8	3,212.77	41,002
	1948	11,098.89	180,318	312	53	3.25	6.2	5,943.78	116,398
	1949	15,424.04	331,954	360	80	3.75	4.6	7,444.17	172,653
	1950	18,778.35	445,273	398	96	4.05	4.2	9,135.29	255,698
Quesnel	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	9,856.63	127,000	252	45	3.50	7.7	13,962.69	171,200
	1948	11,726.60	172,363	312	51	3.50	6.8	15,086.51	316,178
	1949	15,435.00	273,872	403	66	3.70	5.6	17,464.16	458,739
	1950	22,004.89	430,700	510	78	4.00	5.1	24,771.04	708,675
Sechelt	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	15,609.09	139,159	423	30	3.40	11.2	5,747.09	70,300
	1948	20,850.30	255,328	628	40	3.25	8.2	7,488.11	139,777
	1949	30,391.53	446,248	763	52	3.55	6.8	10,946.95	315,380
	1950	39,875.07	591,434	892	55	3.70	6.7	12,007.80	409,694
Smithers	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	10,920.33	102,000	245	36	3.85	10.7	9,737.67	75,000
	1948	10,577.48	158,769	308	49	3.30	6.7	10,867.63	247,854
	1949	15,814.70	333,809	369	83	3.90	4.7	14,248.84	445,398
	1950	20,670.41	567,052	396	123	4.45	3.7	17,006.03	528,626
Terrace	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	2,850.84	17,100	62	26	4.30	16.7	3,692.31	33,100
	1948	4,736.81	52,155	186	38	3.50	9.1	5,984.98	93,072
	1949	9,853.09	136,816	261	50	3.55	7.2	6,649.24	133,184
	1950	14,296.73	256,957	328	73	4.05	5.6	8,667.07	228,086
Vanderhoof	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	4,462.45	43,800	78	49	5.00	10.2	7,917.34	70,000
	1948	4,424.41	64,373	106	60	4.15	6.9	6,138.75	101,171
	1949	5,858.85	114,864	125	84	4.25	5.1	6,608.10	177,005
	1950	7,325.58	173,711	144	109	4.60	4.2	7,784.69	217,696
Williams Lake	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	7,324.45	85,300	116	66	5.70	8.6	11,386.30	150,600
	1948	7,184.58	126,285	157	76	4.30	5.7	13,546.73	292,938
	1949	9,625.70	197,675	202	90	4.35	4.9	16,069.72	432,245
	1950	12,718.04	292,533	259	103	4.45	4.4	19,239.98	568,683
Totals	.....	.....	.....	.....	.....	.....	.....	.....	.....
	1947	621,611.11	12,484,250	18,705	74	3.70	5.0	392,510.63	8,403,265
	1948	957,493.33	21,051,771	22,434	84	3.80	4.5	653,211.43	14,482,126
	1949	1,096,821.61	27,732,914	25,991	96	3.80	4.0	778,320.73	21,099,129
	1950	1,448,626.62	40,120,724	32,688	110	4.00	3.6	1,018,198.44	28,674,720

* Denotes total number of customers at respective dates of acquisition.

† *See* Statement 2, "Combined Operations—Financial Summary."

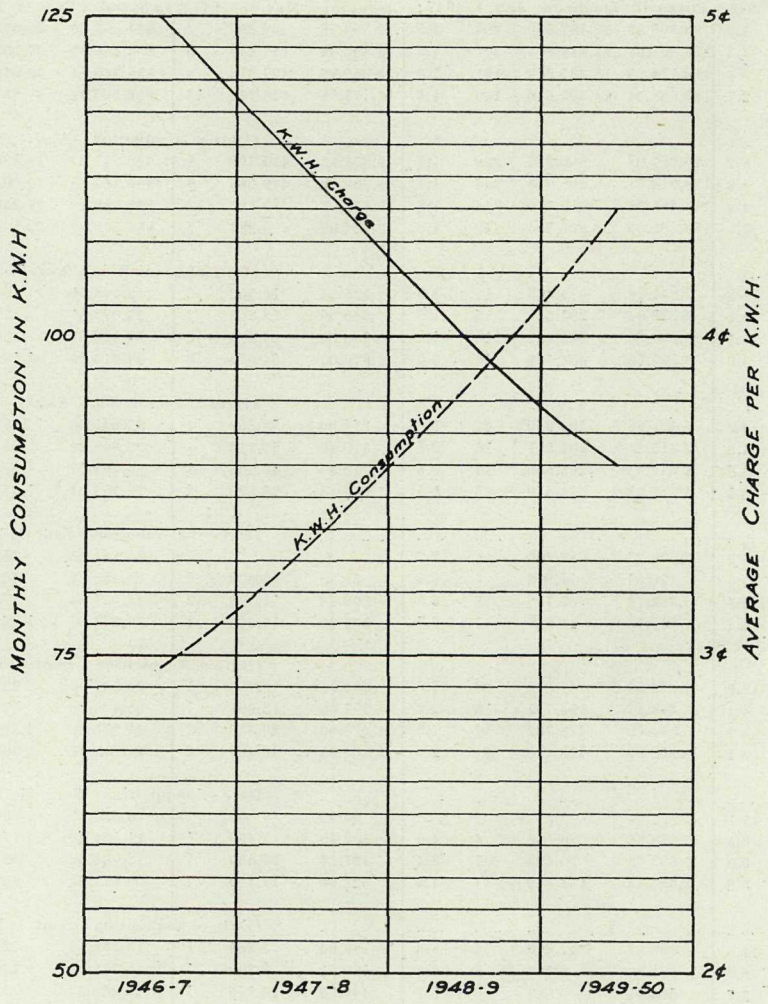
NOTE.—The average monthly consumption and the average monthly bill are based on the average number of customers for the whole year rather than on the actual number shown, which is at the end of the fiscal year.

OF ELECTRICAL ENERGY—*Continued.*

Service.				Power Service.				Street-lighting Service.			Totals.			
Number of Customers.	Av. Monthly Consumption.	Av. Monthly Bill.	Revenue per Kwh.	Revenue.	Consumption.	Number of Customers.	Revenue per Kwh.	Revenue.	Consumption.	Number of Customers.	Revenue.	Consumption.	Number of Customers.	Revenue per Kwh.
	Kwh.	$	c.	$	Kwh.		c.	$	Kwh.		$	Kwh.		c.
Duncan, etc., Aug. 1, 1945; Parksville-Qualicum, Jan. 1, 1947; Chemainus, Mar. 15, 1947; Ladysmith, Nov. 1, 1949.)													8,608*	.....
1,048	310	12.45	4.0	198,306.40	13,187,560	294	1.5	12,563.58	446,398	4	651,405.60	23,073,559	8,823	2.8
1,203	320	13.80	4.3	223,901.54	14,448,894	307	1.5	13,680.38	474,242	5	804,585.83	27,157,416	9,793	3.0
1,503	444	13.70	3.1	213,174.35	15,227,253	131	1.4	13,940.97	467,616	4	835,340.54	32,970,698	10,740	2.5
1,684	511	13.90	2.7	180,688.34	14,405,610	149	1.3	16,476.86	610,789	13	906,520.72	37,831,986	12,542	2.4
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Aug. 1, 1945.)				4,477	.....
795	303	12.55	4.2	125,087.98	7,566,512	226	1.7	9,571.83	434,708	8	420,361.67	14,886,905	5,196	2.8
889	306	13.15	4.3	138,914.71	8,205,735	244	1.7	9,900.79	449,066	8	485,111.18	17,004,444	5,932	2.9
976	335	14.10	4.2	142,438.12	7,959,110	244	1.8	10,672.98	489,535	13	568,509.12	19,255,239	6,893	2.9
1,031	325	14.05	4.3	158,882.09	8,936,704	249	1.8	12,034.99	490,284	8	656,377.68	22,527,629	7,584	2.9
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Aug. 7, 1946.)				288	.....
45	114	8.90	7.8	2,841.19	79,335	12	3.6	325.01	10,952	2	12,363.51	199,348	303	6.2
55	192	9.80	5.1	4,372.84	297,533	15	1.5	660.00	23,946	2	22,075.51	618,195	384	3.6
64	245	10.55	4.3	6,594.36	368,399	16	1.8	730.00	27,291	2	30,192.57	900,297	442	3.4
71	320	11.40	3.6	8,529.56	433,152	20	2.0	870.00	34,070	2	37,313.20	1,168,193	491	3.2
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Aug. 1, 1945.)				289	.....
85	174	14.20	8.2	3,451.98	104,260	22	3.3	374.00	50,808	1	27,645.30	453,268	360	6.1
101	279	13.30	4.8	2,315.88	102,581	13	2.3	518.40	50,112	1	29,647.39	641,234	427	4.6
115	358	13.60	3.8	2,533.81	165,523	17	1.5	776.80	40,006	1	36,209.77	938,140	536	3.9
151	442	15.45	3.5	4,317.93	282,410	25	1.5	1,059.18	25,625	2	52,153.04	1,447,410	688	3.6
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Sept. 1, 1945.)				337	.....
74	91	7.40	8.2	2,228.27	83,400	4	2.7	.....	.....	....	23,584.45	292,859	501	8.1
94	139	7.45	5.3	776.33	11,993	6	6.5	38.50	1,500	2	29,153.24	408,598	730	7.1
120	235	8.15	3.5	3,382.78	97,746	8	3.5	306.28	11,498	2	45,027.54	870,872	893	5.2
126	272	7.95	2.9	887.78	11,526	7	7.7	504.22	16,503	2	53,274.87	1,029,157	1,027	5.2
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Sept. 1, 1945.)				293	.....
66	88	11.40	12.9	3,178.94	47,000	28	6.8	684.00	8,758	1	24,520.94	232,758	340	10.5
102	237	10.40	4.4	3,343.17	154,791	15	2.2	707.00	13,580	1	25,495.28	574,994	426	4.5
108	356	11.40	3.2	6,234.69	478,732	17	1.3	1,078.00	33,415	2	37,376.23	1,291,354	496	2.9
117	380	12.25	3.2	9,862.89	428,428	21	2.3	1,204.65	43,400	2	48,743.98	1,567,506	536	3.1
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Sept. 20, 1945.)				59	.....
35	80	8.95	11.1	.....	.....	.....	.....	93.00	9,000	1	6,636.15	59,200	98	11.2
56	149	9.60	6.5	279.98	6,145	3	4.6	152.50	7,450	1	11,154.27	158,822	246	7.0
66	170	8.50	5.0	1,033.73	30,494	7	3.4	497.27	20,530	1	18,033.33	321,024	335	5.6
73	267	10.15	3.8	2,391.44	154,869	11	1.5	522.00	18,140	1	25,877.24	658,052	413	3.9
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Sept. 1, 1945.)				106	.....
45	129	14.65	11.3	1,008.31	12,200	4	8.3	180.00	3,285	1	13,568.10	129,285	128	10.5
52	168	10.20	6.0	621.87	9,106	5	6.8	180.00	2,250	1	11,365.03	176,900	164	6.4
57	278	10.35	3.7	560.09	9,884	6	5.7	446.50	16,140	1	13,473.54	317,893	189	4.2
62	310	11.10	3.6	637.83	11,221	6	5.7	577.60	22,160	1	16,325.70	424,788	213	3.9
.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of acquisition: Sept. 1, 1945.)				161	.....
64	207	15.20	7.6	3,059.51	53,000	22	5.8	452.00	3,689	1	22,222.26	292,589	203	7.6
86	311	14.40	4.6	1,269.63	38,452	10	3.3	461.40	8,400	1	22,462.34	466,075	254	4.8
102	385	14.30	3.7	1,813.19	64,472	14	2.8	792.00	29,297	1	28,300.61	723,689	319	3.9
110	439	14.85	3.4	2,867.45	99,413	15	2.9	792.00	26,321	1	35,617.47	986,950	385	3.6
.....	.....	.....	.....	.....	.....	.....	.....	.....	(At respective dates of acquisition.)				26,938	.....
3,494	278	13.00	4.7	359,255.52	21,713,423	816	1.7	28,950.73	1,112,892	24	1,402,327.99	43,713,830	23,039	3.2
4,188	308	13.90	4.5	471,260.08	27,343,260	818	1.7	40,816.20	1,436,651	30	2,122,781.04	64,313,808	27,470	3.3
4,911	382	14.10	3.7	483,722.36	28,909,668	677	1.7	45,807.17	1,679,586	40	2,404,671.87	79,421,297	31,619	3.0
6,070	420	14.90	3.6	553,600.90	32,970,990	816	1.7	59,963.26	2,080,484	52	3,080,389.22†	103,846,918	39,626	3.0

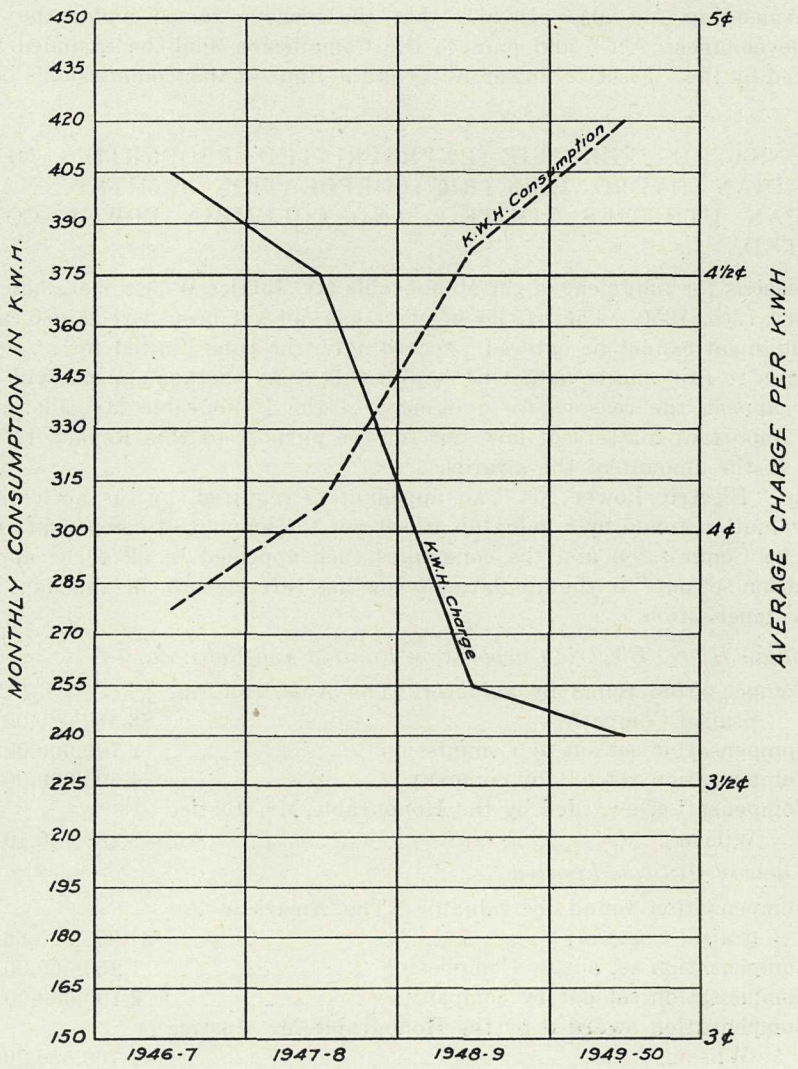
BRITISH COLUMBIA POWER COMMISSION

GRAPH SHOWING INCREASE IN RESIDENTIAL CONSUMPTION AND REDUCTION IN KWH CHARGE TO CUSTOMERS 1946 - 1950.



BRITISH COLUMBIA POWER COMMISSION

GRAPH SHOWING INCREASE IN COMMERCIAL CONSUMPTION AND REDUCTION IN KWH CHARGE TO CUSTOMERS 1946 - 1950.



II. LEGAL.

1. LEGISLATION.

With certain exceptions, the "Electric Power Act" does not apply to a corporation that owns or operates a power plant primarily for the generation of power for its own industrial purposes. By the "Electric Power Act Amendment Act, 1950," it was provided that the Commission might, by agreement, and with the approval of the Lieutenant-Governor in Council, acquire real or personal property of such a corporation. Where such property is purchased, the amendment also provides a means of determining the purchase price if not agreed upon.

The Amending Act also provides that the moneys raised under the "Central Interior Development Act" and paid to the Commission shall be excluded from the amount fixed by the "Electric Power Act" as the limit of the Commission's borrowing power.

2. COMPENSATION FOR THE EXPROPRIATED PROPERTIES OF WEST CANADIAN HYDRO ELECTRIC CORPORATION LIMITED, NANAIMO-DUNCAN UTILITIES LIMITED, AND COLUMBIA POWER COMPANY, LIMITED.

The reasons for judgment of the Honourable Mr. Justice Wilson were handed down on February 13th, 1950. The matter of costs has not yet been determined, and, until decided, judgment cannot be entered. Accordingly, the time limited for an appeal has not yet begun to run, and it cannot be said at this time whether appeals will be taken. Subject to appeal, the reasons for judgment of the Honourable Mr. Justice Wilson determine important matters of law, but for the purpose of this Report, reference is made only to the amount of the awards.

By the "Electric Power Act" an appellant is required, by his notice of appeal from the valuation found by a valuator, to set out the amount of compensation deemed proper. The Commission and the companies each appealed in all three appeals and "compensation set out" in the tabulation below has reference to the appellant's opinion of proper compensation.

West Canadian Hydro Electric Corporation Limited and Subsidiaries.

Compensation found by valuator (The American Appraisal Company)	$3,462,020.05
Compensation set out by Commission	2,700,000.00
Compensation set out by company	4,500,000,00*
Compensation awarded by the Honourable Mr. Justice Wilson	3,289,700.10

Nanaimo-Duncan Utilities Limited.

Compensation found by valuator (The American Appraisal Company)	$1,878,325.66
Compensation set out by Commission	1,250,000.00
Compensation set out by company	2,100,000.00
Compensation awarded by the Honourable Mr. Justice Wilson	1,706,586.29

Columbia Power Company, Limited, and Subsidiary.

Compensation found by valuator (The American Appraisal Company)	$334,268.71
Compensation set out by Commission	200,000.00
Compensation set out by company	364,000.00
Compensation awarded by the Honourable Mr. Justice Wilson	226,916.89

* Approximate.

3. ACQUISITION OF ELECTRICAL PROPERTIES.

During the year April 1st, 1949, to March 31st, 1950, the Commission acquired the following properties:—

(1) April 1st, 1949: By purchase, the electrical distribution system of The Corporation of the City of Courtenay serving the City of Courtenay, the Village of Comox, and adjacent areas. The City supplied a total of 1,723 customers with 25-cycle power purchased from the Canadian Collieries (Dunsmuir), Limited, plant on the Puntledge River.

(2) June 30th, 1949: By expropriation from Northland Utilities (B.C.), Limited, its electrical distribution system, serving 1,088 consumers at Dawson Creek, 137 consumers at Pouce Coupe, and 53 consumers at Rolla.

(3) September 30th, 1949: By expropriation from Lake Cowichan Electric Company, Limited, its hydro-electric and diesel-electric generating plant and electrical distribution system at Lake Cowichan. This system served 467 consumers.

(4) September 30th, 1949: By purchase from Carlin Bros., Limited, its hydro-electric generating plant and electrical distribution system at Chase. The plant and system were purchased in 1948, but were not taken over until the above date, at which time 147 consumers were being served.

(5) November 1st, 1949: By purchase from The Corporation of the City of Ladysmith, its electrical distribution system, serving 871 customers in the City of Ladysmith and adjacent areas.

(6) November 1st, 1949: By purchase from Kitanmax Water and Power Company, Limited, its electrical distribution system at Hazelton. The company supplied 68 consumers.

(7) December 9th, 1949: By purchase from War Assets Corporation, two diesel-electric generating plants at the former airport at Long Beach and electrical distribution-lines part way toward both Tofino and Ucluelet. In addition, a quantity of power-plant equipment and distribution-lines was acquired at Ucluelet.

(8) January 31st, 1950: By purchase from Invermere Contracting Company, Limited, its distribution system at Invermere, serving 63 consumers.

(9) January 31st, 1950: By purchase from Simon Ronacher, his electrical distribution system and a diesel-electric generating unit at Athalmer. Twenty customers were connected to this distribution system.

(10) January 31st, 1950: By purchase from H. H. Moore, his distribution system at Edgewater, serving 21 customers.

(11) February 15th, 1950: By purchase from S. Anderson & Company, its distribution system at Decker Lake. This system served 28 consumers.

In addition to these acquisitions, a small distribution system at Louis Creek, near Barriere, north of Kamloops, was taken over from the Glenburn Power & Light Association.

4. RIGHTS-OF-WAY AND SITES.

During the fiscal year the following progress was made in the acquisition of right-of-way easements along the Commission's three main transmission systems:—

(1) The 132-kv transmission-line from the Whatshan Development to Vernon required the acquisition of a right-of-way 130 feet in width over a distance of 67 miles. The line crossed 226 parcels of land, registered in the names of 85 owners. The acquisition of this right-of-way was commenced on February 1st, 1950, and by the end of the fiscal year easements over 48 parcels had been completed with 44 owners, negotiations with the remaining 41 owners being in various stages of completion.

(2) There are 8 outstanding right-of-way claims on the 63-kv transmission-line from Vernon to Kamloops. The right-of-way in connection with this

line crossed 224 parcels of land registered in the names of 114 owners, and settlements covering these 8 claims are still outstanding.

(3) In the course of the year, 16 of the 28 outstanding right-of-way claims on the 138-kv transmission-line from the John Hart plant to Nanaimo and Port Alberni were completed. The remaining claims are proceeding toward completion. This line crossed a total of 414 parcels of land, registered in the names of 115 owners.

Survey plans required in connection with the acquisition of easements by way of right-of-way over private property for the Kamloops–Chase distribution-line, Hope–Flood line, and the Nanaimo sulphate-pulp mill line were completed. The preliminary work of contacting the private-property owners prior to acquiring the necessary easements was begun early in January, 1950.

Other distribution-line extensions in rural areas of the Province necessitated the acquisition of numerous easements by way of right-of-way over private lands.

The surveys necessary to acquire the remaining privately owned lands for the Whatshan Lake Development were completed, and negotiations with the respective owners are progressing. This development necessitated the purchase of some 200 acres of privately owned land and 112.79 acres of Crown land, together with the occupation of 1,515.32 acres of vacant Crown land, which will be flooded when the level of Whatshan Lake is raised.

Survey plans were completed for both the overhead cable crossing of the Fraser River at Hope and the construction of a wharf on Lower Arrow Lake near the Whatshan power-house site. The plans have been deposited with the Dominion Department of Public Works, and applications made under the provisions of the "Navigable Waters Protection Act" for approval of the work.

Sub-station sites were acquired at the following places:—

(1) Saltspring Island, by purchase from A. L. Young.

(2) Kamloops, by easement agreement from Tetsuo Sakaki.

Diesel power-house sites were acquired at the following places:—

(1) Athalmer, by purchase from Simon Ronacher.

(2) Houston, by purchase from The Director, The Veterans' Land Act.

(3) Burns Lake, by lease from Canadian National Railways.

5. CONTRACTS.

Contracts have been drawn and settled covering all major construction projects undertaken during the year, together with numerous contracts for the supply of plant and equipment required in connection therewith.

Apart from the ordinary service contracts, agreements were completed for the supply of industrial power in power districts and for the supply of street-lighting service in certain incorporated villages and unorganized communities.

6. WATER LICENCES.

Application was made to the Comptroller of Water Rights for a licence to divert, use, and store water out of Clowhom River for power purposes on the Salmon Arm of Seechelt Inlet.

7. INSURANCE.

Comprehensive insurance coverages on all phases of the Commission's operations were maintained in force. There were certain rearrangements and deletions of some types of coverage effected in order to meet the needs of the Commission.

No major claims under any of the coverages arose during the course of the year's operations. There was, however, one fire claim for the approximate sum of $400 covering damage to an operator's cottage at the John Hart Development, Campbell River, which is in the process of adjustment. A number of small claims, under fleet coverage, public-liability and property-damage coverages, were reported and satisfactorily settled.

III. CONSTRUCTION.

1. PRODUCTION PLANT.

ALERT BAY.

The diesel-electric installation at Alert Bay was increased by the substitution of a 312-kva unit for a 62.5-kva unit, making the total installation at this plant 687 kva.

ATHALMER.

A new diesel-electric generating-station was completed at Athalmer during the winter of 1949–50 to supply electrical energy to the Windermere area. The initial installation consisted of one 312-kva and one 250-kva diesel-electric generating unit, making the total capacity 562 kva.

BURNS LAKE.

A new three-unit diesel-electric generating plant was constructed during the autumn of 1949 to replace the old plant which contained three 31-kva portable generating units, being removed to Houston. The installation in the new plant consisted of two 125-kva diesel-electric generating-sets, one of which was in stock and the other released from Smithers, thus making the total plant capacity 250 kva. The design of the new plant provides for considerable expansion of capacity as may be required.

DAWSON CREEK.

Dawson Creek diesel-electric generating plant, acquired from War Assets Corporation in March, 1949, and leased to Northland Utilities (B.C.), Limited, was taken under Commission operation in July, 1949. The installed capacity at that time was 1,150 kva. An additional diesel-electric generating unit having a capacity of 750 kva was added in November, 1949, making the total capacity 1,900 kva. The new unit is a dual-fuel type engine capable of operating mainly on natural gas if such should become available at Dawson Creek.

HAZELTON.

Following completion of an agreement between the Commission and the Wrinch Memorial Hospital, the existing diesel-electric direct-current generating system at the hospital was replaced by installing two new 125-kva alternating-current generating units.

HOPE.

Following interconnection with the British Columbia Electric Railway Company, Limited, and conclusion of arrangements for purchase of power for distribution in Hope from that company, all generating units, with the excepiton of one 250-kva stand-by, were removed from the Hope power plant for use in other areas.

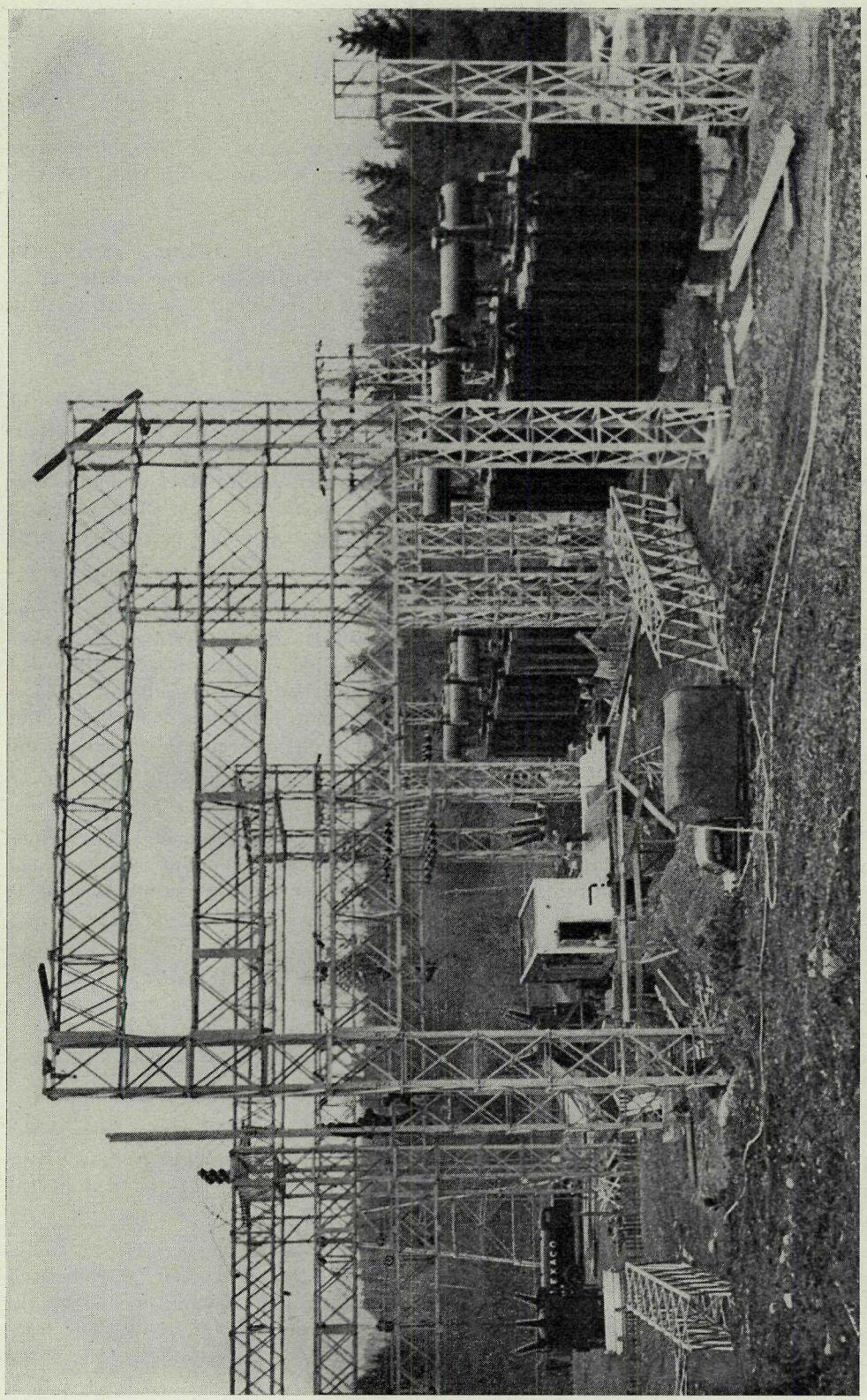
HOUSTON.

Construction was started during February, 1950, on a diesel-electric generating-station in which three 31-kva portable diesel-electric generating-sets released from Burns Lake will be installed. This work was still progressing at the end of the fiscal year.

JOHN HART DEVELOPMENT, CAMPBELL RIVER.

The installation of four 28,000-horsepower units at the John Hart hydro-electric development was completed and the plant was inspected and officially opened by the Premier, the Honourable Byron I. Johnson, M.B.E., on October 21st, 1949. The same occasion marked the completion of the storage-dam at Ladore Falls, below the outlet of Lower Campbell Lake.

ENLARGING TRANSMISSION SUBSTATION NEAR NANAIMO.



Transmission substation near Nanaimo is being rapidly enlarged to take care of the demands of new industry. At the right a new bank of transformers will step down power from 132 kv to a 60-kv sub-transmission voltage. Ultimate capacity will be 34,800 kva in two duplicate single-phase banks.

Previous to the formal opening, sufficient water had been impounded in the lake to safeguard the required production of electrical energy during the dry period which occurred in September and early October, 1949. While the extremely snowy winter interfered to some extent, the work of clearing land to be flooded by the raising of the lake has continued. Floating equipment has been constructed for the purpose of removing the fallen timber and trash from the lake as the water is being raised during the coming summer.

Work was completed on 5½ miles of secondary-road diversion, replacing an existing road to the Brewster Lake area which will be flooded when the ultimate level of Lower Campbell Lake is reached.

LILLOOET.

The temporary diesel-electric installation was increased by the addition of a 125-kva portable unit released from Hope. The total installed diesel-electric capacity of the plant is now 312.5 kva, since one of the smaller units has been withdrawn from service and stored.

NAKUSP.

Improvement of the water-supply to the reconstructed hydro-electric plant at Nakusp was ensured by construction of a low storage-dam, complete with fishway, at the outlet of Box Lake.

QUESNEL.

The diesel-electric installation at Quesnel was changed by removing one 63-kva unit, which was sent to Whatshan for temporary use for generation of construction power, and installing a 312-kva unit from Hope. The total capacity of the plant is now 936 kva.

SMITHERS.

The diesel-electric installation at Smithers was changed by removing one 125-kva unit to Burns Lake and installing a 312-kva unit from Hope. The total capacity of the plant is now 936 kva.

WESTBANK.

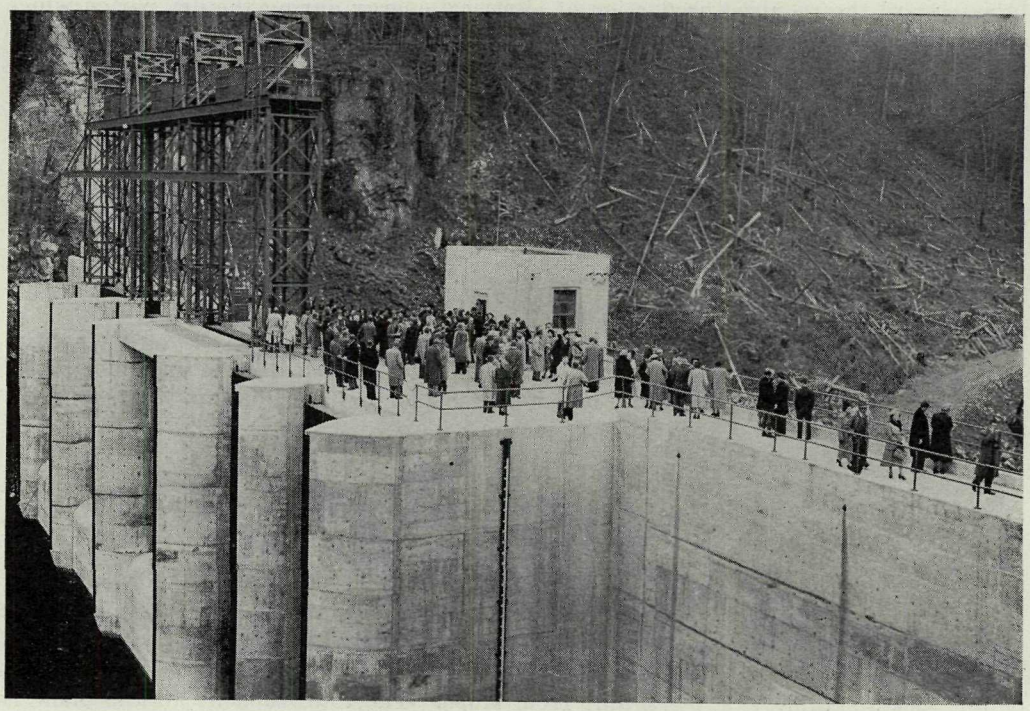
A 50-kva diesel-electric generating unit was transferred from Westbank to temporary use for generation of construction power at Whatshan and a 312-kva additional generating unit was installed during the early summer. The capacity of this plant is now 926.5 kva.

WHATSHAN.

The excavation of the 12,500-foot tunnel was within 500 feet of completion by the end of the fiscal year. Owing to the nature of material encountered, the amount of concrete lining required had to be increased. The amended schedule indicates the completion of the development toward the end of 1950.

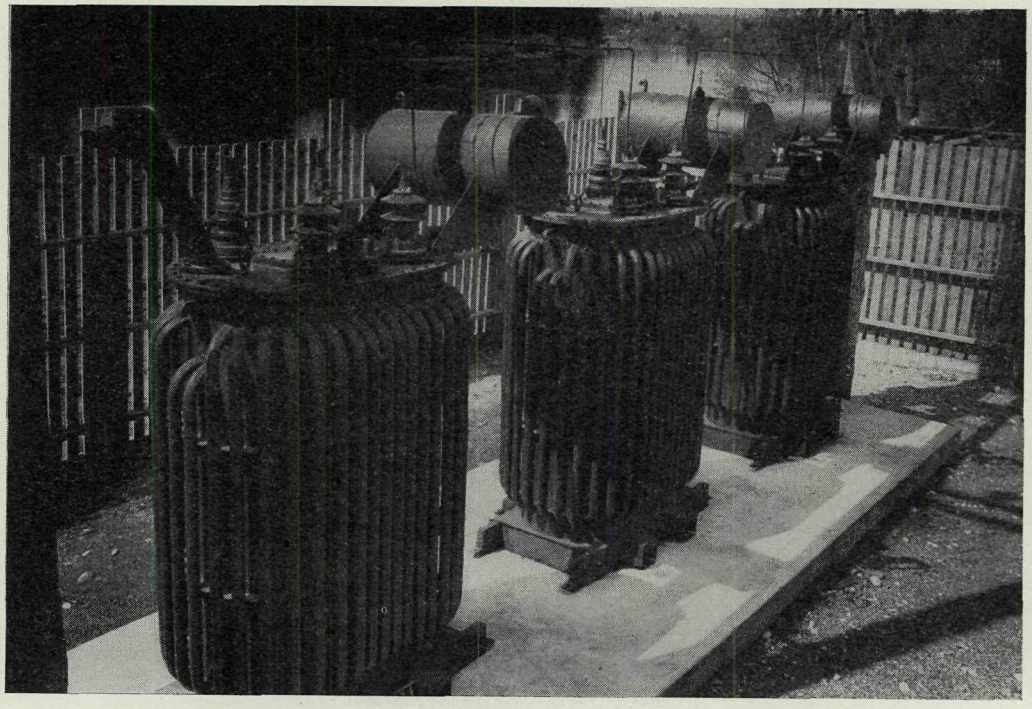
Prior to the end of 1949 a concrete control-dam at the outlet of Whatshan Lake approximately 30 feet high, a low earth-fill cut-off dam, an intake structure at the Whatshan Lake end of the tunnel, and the power-house substructure had been substantially completed. The power-house superstructure steel work had also been erected.

LADORE FALLS STORAGE-DAM.



View of up-stream face on opening day, October 21st, 1949. Water-level is gradually being raised as more power is required.

ALBERNI SUBSTATION COMPLETED.



Increased distribution voltage and a capacity three times beyond Alberni's peak load for last winter have been achieved with completion of the transformer substation on the Somass River.

The following is a summary of the additions and changes to generating plants made during the year:—

Plant Location.	Type of Prime Mover.	Generating Units Installed.			Generating Units Removed.			Net Additions.
		Number.	Capacity, Kva.	Total Kva.	Number.	Capacity, Kva.	Total Kva.	
Alert Bay	Diesel	1	312	312	1	62.5	62.5	249.5
Athalmer	Diesel	1 1	250 312	562	....	.....	.....	562
Burns Lake	Diesel	2	125	250	3	31	93	157
Dawson Creek	Diesel	1	750	750	....	.....	.....	750
Hazelton	Diesel	2	125	250	....	.....	.....	250
Hope	Diesel	....	.....	.....	2 1	312 125	624 125	—749
John Hart Development, Campbell River	Hydro	2	25,000	50,000	....	.....	.....	50,000
Lillooet	Diesel	1	125	125	1	62 5	62.5	62.5
Quesnel	Diesel	1	312	312	1	63	63	249
Smithers	Diesel	1	312	312	1	125	125	187
Westbank	Diesel	1	312	312	1	50	50	262
Totals	.....	14	.....	53,185	11	.....	1,205	51,980

2. TRANSMISSION PLANT.

Vancouver Island System.

The 10-mile 60-kv transmission-line from Nanaimo substation (TS 3) to Nanaimo sulphate-pulp mill, together with the installation of three 4,000-kva 60/13.8-kv transformers at the pulp-mill, was completed, and the line was energized on December 28th, 1949.

In the autumn of 1949 a contract was made covering excavation and concrete work for the addition of three 5,800-kva 138/69-kv transformers and switch gear at Nanaimo substation. Part of this work was completed before the winter and was resumed following drying out of the ground toward the end of March, 1950. Contracts had also been arranged for steel work and electrical installation, and it is expected that this programme will be completed by the end of June, 1950.

In addition to this increased transformer capacity, the electrical contract included work in connection with the installation of 138-kv circuit-breakers, disconnects, and metering equipment for interconnecting with the British Columbia Electric Railway Company, Limited, 138-kv line from Nanaimo to Victoria. The contract with the British Columbia Electric Railway Company, Limited, provides for delivery of power over this line commencing September 1st, 1950.

Arrangements were completed for acquiring land adjacent to the Puntledge hydro-electric generating-station of Canadian Collieries (Dunsmuir), Limited, for installation of a substation to supply 60-cycle power to the Comox Valley area. Orders were placed for three 5,000-kva 138/13.8-kv transformers, and at the end of the year a call for tenders for clearing the site had been issued. The work of installing this substation and of connecting lines within the area of supply will be proceeded with during the coming year.

Vernon-Kamloops.

Construction of the 63-kv Vernon–Kamloops transmission-line, together with terminal facilities at Vernon and Kamloops, was completed early in the summer, and this line has since been in operation on interchange of power between the two areas. Work was commenced in December, 1949, on the construction of a 1,500-kva substation

taking power from this line to serve a new distribution system serving Falkland, Westwold, and Monte Lake.

WHATSHAN-VERNON.

Construction of the 138-kv Whatshan–Vernon transmission-line was nearly complete at the end of the year. The galvanized-steel switching structure at the Whatshan end, together with foundations for transformers and other equipment, had also been constructed and installation of electrical equipment was in progress.

Concrete foundations for transformers and other equipment at the Vernon end were also completed. The initial installation at this substation will consist of three 8,333-kva 138/63-kv transformers with a spare unit.

3. DISTRIBUTION PLANT.

During the year the distribution system was increased by 414.1 circuit-miles, which compares with 257.9 miles in the previous fiscal year. The extensive programme of improvement by replacing overloaded lines and increasing transformer capacity was continued.

Entirely new systems were constructed in the Hazelton and Lake Windermere Power Districts and the Houston area. Major extensions include the connection of Decker Lake to the Burns Lake distribution system, the Kamloops–Chase line, and rural electrification in the North Okanagan. The Campbell River and Lillooet distribution systems were rebuilt during the year.

Street-lighting additions and improvements were made in a number of communities, including Alberni, Campbell River, Courtenay, Hope, Lillooet, Nanaimo, Sechelt, and Vanderhoof.

The more significant items of distribution-plant construction are described under the various power districts.

ALBERNI.

Increasing demands made it necessary to improve 12.04 miles of secondaries and add 232½ kva in distribution transformer capacity. The conversion of the Alberni system from 2,300 volts to 6.9/12.0 kv was commenced in the latter part of the year.

ALERT BAY.

Minor improvements only were required following the complete reconstruction of the distribution system during the previous year.

BURNS LAKE.

The Decker Lake system acquired by the Commission in February, 1950, was reconstructed and connected to the Burns Lake system by a 2.3/4.0-kv line. Some minor additions were also built in the Burns Lake area.

CAMPBELL RIVER.

Conversion from 25-cycle to 60-cycle operation of all services north of the south boundary of the Village of Campbell River, totalling 534, was affected. This portion of the system is now fed from the John Hart Development. The distribution system which was acquired by the Commission on January 1st, 1949, was reconstructed and extended as far as Painter's Lodge. Transformer capacity of 115 kva was added.

COMOX VALLEY.

With the acquisition on April 1st, 1949, of the distribution plant previously owned by the City of Courtenay, the areas of Courtenay, Cumberland, Royston, and adjacent territory were combined to form the new Comox Valley Power District.

The capacity of 6.8 miles of conductor was increased and 146 kva of transformer capacity was added to improve the distribution system.

A house-to-house canvass was carried out to determine the amount of customer-owned equipment which would be affected, and plans for conversion to 60 cycles were completed by the end of the fiscal year.

DAWSON CREEK.

This distribution system was acquired by the Commission on June 30th, 1949. Only minor improvements and additions have been made to date.

GOLDEN.

Three short extensions were constructed in this district during the year.

HAZELTON.

Following acquisition by the Commission of the Kitanmax Water and Power Company, Limited, serving part of Old Hazelton, the system was completely rebuilt and extended to include communities in New Hazelton and South Hazelton. The area is served by a new diesel-electric generating plant located in the grounds of the Wrinch Memorial Hospital.

HOPE.

The distribution-line to serve the area from Hope to Laidlaw was completed during the year. This line is 11.7 miles in length, voltage being 6.9/12.0 kv. The street-lighting system was also extended.

HOUSTON.

Houston is the first isolated community in which the Commission has installed an entire electrical plant. Construction of the distribution system was completed at the end of the fiscal year and service will be commenced shortly after, following completion of the generating plant. A street-lighting system and 3.4 miles of distribution-line, however, was authorized.

KAMLOOPS.

An 11.5-kv distribution-line was constructed for a distance of 32 miles eastward along the Thompson River from Kamloops to Chase, and the Chase system, purchased September 30th, 1949, was rebuilt and extended. It is proposed to improve and augment the supply of power to this extension by means of a substation taking energy from the 60-kv Vernon–Kamloops transmission-line near Monte Creek. Until this is constructed, power will continue to be fed to this system from Kamloops.

Three extensions in Kamloops and North Kamloops requiring 127 poles added a further 4.7 miles of primary lines to the system.

LAKE COWICHAN.

This power district was acquired and operation by the Commission commenced on October 1st, 1949. Since that date the distribution system of 2.3/4.0 kv has been extended by the addition of 1.2 miles of line, some conductor was increased in size to provide greater capacity, and 55 kva of additional transformer capacity was put in service.

Shortly after acquisition the distribution plant was surveyed with a view to determining future requirements.

LAKE WINDERMERE.

This new power district covers a group of communities in the Upper Columbia Valley, including Athalmer, Edgewater, Invermere, Wilmer, Windermere, and Radium Hot Springs, which were only in part provided with restricted and spasmodic service.

This area will be served from a new diesel-electric generating plant at Athalmer through 31.6 miles of 6.9/12.0-kv distribution-line, part of which was placed in operation on March 1st, 1950, and the balance of which will be completed at an early date.

LILLOOET.

During the fiscal year the distribution system in Lillooet was entirely rebuilt. Eighty-one new services, an increase of over 50 per cent., were added to the system during the year. A street-lighting system was also installed.

NAKUSP.

Minor additions only were made to this distribution plant.

NANAIMO-DUNCAN.

A number of projects in this large power district were completed during the year. Notable among these are:—

(*a*) The construction of a 14,000-foot 23-kv submarine cable across the northerly entrance to Sansum Narrows, south of Crofton, greatly improving conditions on Saltspring Island.

(*b*) A 60-kv interconnection at the south end of the system, together with a substation-capacity increase, improving voltage conditions in the Duncan area.

(*c*) Extensions in the Errington-Coombs area, along the Alberni Highway, and in the Hilliers area were made, thus bringing service to many Vancouver Island residents for the first time.

(*d*) Extension of the 23-kv line from Qualicum north to Bowser, to serve the Dashwood, Qualicum Bay, and Bowser areas, was commenced, and by the close of the year was nearing completion.

The capacity of existing distribution-lines throughout the district was increased by the addition of 1,114 kva in transformer capacity and the change to larger sizes of 26.6 miles of conductor. Distribution voltage conditions were improved in many localities, particularly in the Somenos area where a new substation was built and at Qualicum where voltage regulators were installed. A fourth conductor was added to the 13.2/23.0-kv line between Craig's Crossing and Qualicum.

The distribution system serving Ladysmith, which was previously owned by that city, was acquired on November 1st, 1949, and immediately surveyed to determine requirements as to increased capacity and extension.

NORTH OKANAGAN.

The rural electrification scheme was actively pursued during the year, particularly at the northern end where the system has now been extended toward Sorrento and Malakwa. These additions required the use of 2,700 poles to build over 120 miles of primary and nearly 25 miles of secondary lines.

Construction of a 6.9/12.0-kv distribution system to supply the Falkland-Westwold-Monte Lake area was well advanced at the end of the year.

PEACHLAND-WESTBANK.

A 2.1-mile 2,300-volt extension was constructed on sixty-seven poles in this area during the year.

QUESNEL.

Two short primary extensions added 1 mile of line to the system. The line, acquired from the Department of Transport, 1.2 miles in length, was connected to 4-wire 2.3/4.1 kv. Twenty-six distribution transformers were added to the system.

SECHELT.

Over 6 miles of new distribution-line was built in this area during the year. The street-lighting system was considerably augmented. A total of 1.3 miles of conductor was changed to provide increased capacity, while 30 kva of additional transformer capacity was installed.

SMITHERS.

The Smithers–Telkwa line was converted from 2.3/4.1 kv to 6.9/12.0 kv, provision for which had been made when the line was first constructed. A 3-mile single-phase extension to this line was built, and 1 mile more added to the 2,300-volt portion of the system during the year.

TERRACE.

An extension to Braun's Island, 4.2 miles in length, was built, and 1.1 miles of secondary line were added to the system. In this rapidly growing area the number of customers increased by about 25 per cent. during the past year.

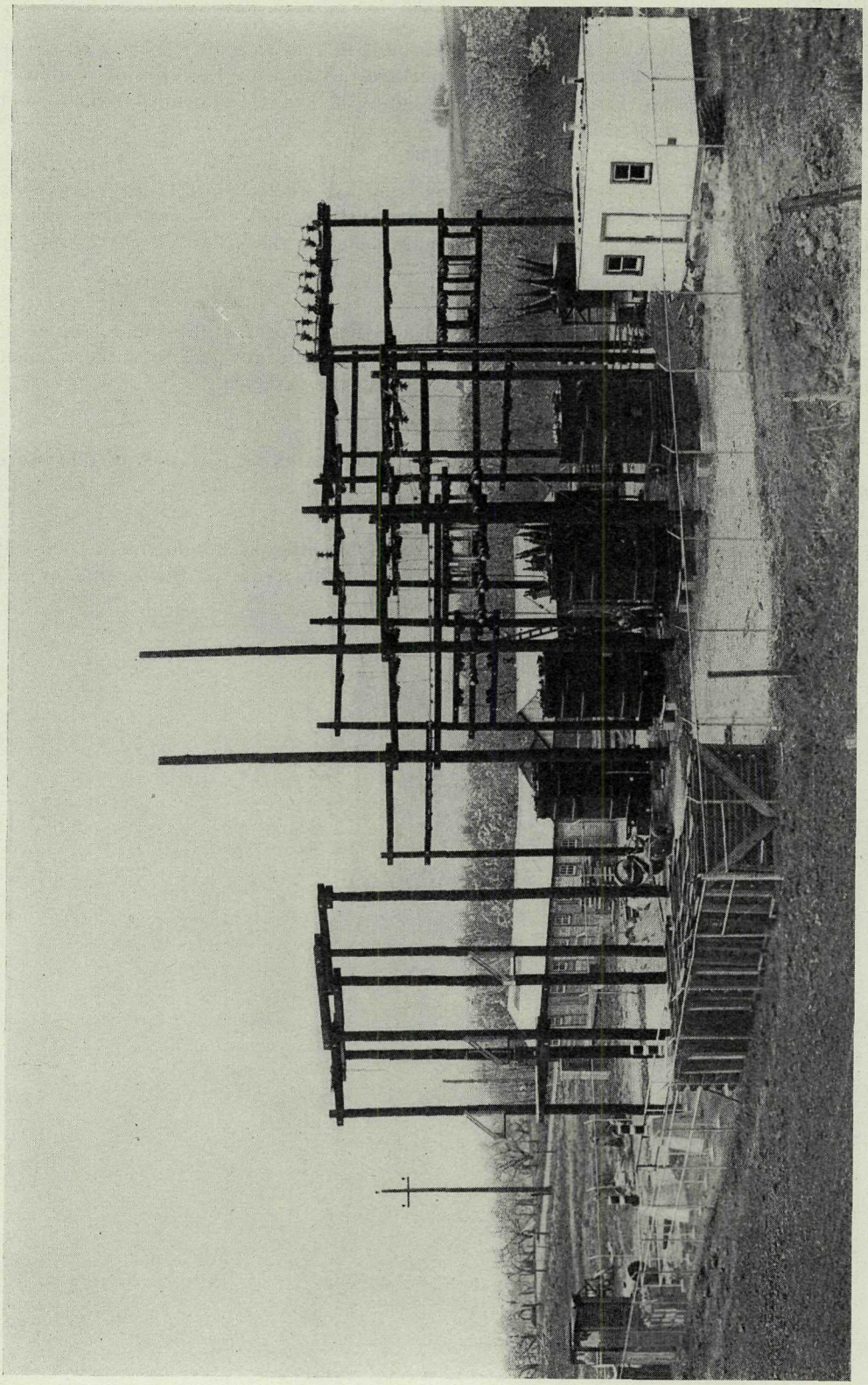
VANDERHOOF.

Two short extensions and other minor additions, totalling 6.5 miles of line, were constructed in this area.

WILLIAMS LAKE.

This system was increased by the addition of 6.5 miles of single-phase 2,300-volt line and 1.75 miles of secondary line. The construction required the setting of 127 poles.

TERMINAL STATION, EAST OF VERNON.



Junction-point of 132-kv and 60-kv lines for the Kamloops-Okanagan transmission system.
Power from the Whatshan Development will reach this point at 132 kv.

DISTRIBUTION-LINE CONSTRUCTION DURING FISCAL YEAR ENDED MARCH 31ST, 1950.

Power District.	Voltage, Kv.	Miles of Line added.			New Services added.	Street-lights added.
		Primary.	Secondary.	Total.		
Alberni	2.3	0.4				
	6.9	1.4				
	6.9/12.0	1.0				
		— 2.8	1.7	4.5	166	59
Alert Bay	2.3	0.3	0.2	0.5	32	*Nil*
Burns Lake	2.3/4.0	10.3	2.0	12.3	121	*Nil*
Campbell River	13.2	8.3	2.7	11.0	153	*Nil*
Comox Valley	2.3	3.3	2.2	5.5	123	8
Dawson Creek	8.0	0.5				
	4.0	0.3				
		— 0.8	*Nil*	0.8	73	*Nil*
Golden	2.3	0.3	0.1	0.4	26	*Nil*
Hazelton	2.3	8.2	2.7	10.9	158	*Nil*
Hope	6.9/12.0	11.7	2.5	14.2	118	12
Houston	6.9/12.0	1.6	1.8	3.4	*Nil*	15
Kamloops	11.5	33.5				
	2.3	4.0				
		— 37.5	5.1	42.6	585	*Nil*
Lake Cowichan	2.3/4.0	1.0	0.2	1.2	35	*Nil*
Lake Windermere	6.9/12.0	31.6	8.0	39.6	104	*Nil*
Lillooet	2.3	1.9	1.0	2.9	81	17
Nakusp	2.3	1.3	*Nil*	1.3	24	*Nil*
Nanaimo-Duncan	2.3	35.8				
	6.9	0.7				
	13.2	23.9				
		— 60.4	20.8	81.2	1,195	95
North Okanagan	6.9	121.6	23.6	145.2	808	*Nil*
Peachland-Westbank	2.3	2.1	*Nil*	2.1	54	*Nil*
Quesnel	2.3/4.0	2.1	1.4	3.5	122	*Nil*
Sechelt	2.3	0.1				
	6.9/12.0	2.2				
		— 2.3	3.9	6.2	169	18
Smithers	6.9/12.0	3.0				
	2.3	1.0				
		— 4.0	*Nil*	4.0	62	*Nil*
Terrace	2.3	4.2	1.1	5.3	80	*Nil*
Vanderhoof	2.3	6.4	.8	7.2	25	2
Williams Lake	2.3	6.5	1.8	8.3	75	*Nil*
Totals	.....	330.5	83.6	414.1	4,389	226

PROBLEMS IN RURAL ELECTRIFICATION.

Aerial photographs assisted engineers in the North Okanagan Power District in solving problems of approach to hidden farms when extending rural distribution system.

IV. OPERATION.

1. PRODUCTION.

The largest single increase to the system generating capacity was the addition of two 25,000-kva generators at the John Hart Development power-house. Two new generating-stations were brought into operation during the year—Hazelton, with 250 kva, commenced operation November 3rd, 1949, and Athalmer, with 562 kva, went on the line March 1st, 1950. One small diesel set, rated at 93.7 kva, acquired with the property purchased from Lake Cowichan Electric Company, Limited, is used temporarily as a stand-by.

After August 20th, 1949, when purchased power from the B.C. Electric system began to be supplied to the Hope Power District, the generating capacity at the Hope plant was reduced to 250 kva. Net additions to other existing generating-stations are fully set out elsewhere in this Report.

GENERATING CAPACITY IN OPERATION, MARCH 31ST, 1950.

Plant Location.	Type.*	Number of Units.	Capacity in Kva.
Alert Bay	D	3	687.0
Athalmer	D	2	562.0
Barriere	H	2	1,695.0
Burns Lake	D	2	250.0
Dawson Creek	D	5	1,900.0
Golden	D	3	562.5
Hazelton	D	2	250.0
Hope	D	1	250.0
John Hart	H	4	100,000.0
Kamloops	S	4	3,375.0
Lake Cowichan	D	1	93.7
Lillooet	D	3	312.5
Nakusp	HD	2	325.0
Quesnel	D	3	936.0
Sechelt	HD	4	700.0
Shuswap Falls	H	2	6,500.0
Smithers	D	3	936.0
Terrace	D	3	437.5
Vanderhoof	D	3	437.5
Westbank	D	6	926.5
Williams Lake	D	4	718.5
Totals		62	121,854.7

* NOTE.—D=diesel; H=hydro; S=steam.

Power was purchased from Canadian Collieries (Dunsmuir), Limited, to supply the Comox Valley and Campbell River districts, the latter in part only as the 60-cycle conversion work was under way.

Subsequent to August 20th, 1949, power was purchased from the British Columbia Electric Railway Company, Limited, for distribution in the Hope District. Following the acquisition of the system operated by the Lake Cowichan Electric Company, Limited, on October 1st, 1949, power was purchased from the Hillcrest Lumber Company, Limited, for distribution in the Lake Cowichan area. The sum of the maximum demands of purchased power was 2,540 kva. Accordingly, the system capacity was:—

	Kva.
Commission's generating capacity	121,854.7
Purchased power	2,540.0
Total	124,394.7

POWER GENERATED AND PURCHASED.

I. Generated (Kwh).

Station.	Fiscal Year ended March 31.		Difference.
	1950.	1949.	
Alert Bay	1,061,710	767,044	294,666
Barriere	10,295,905	9,346,210	949,695
Burns Lake	398,470	142,792	255,678
Dawson Creek (eight months)	2,299,040	.....	2,299,040
Golden	637,185	480,662	156,523
Hazelton (four months)	106,240	.....	106,240
Hope	668,960	1,358,450	*—689,490*
John Hart	101,482,000	82,089,400	19,392,600
Kamloops	4,487,030	3,409,950	1,077,080
Lake Cowichan	4,560	.....	4,560
Lillooet	538,544	452,680	85,864
Nakusp	572,157	456,855	115,302
Nanaimo	.....	262,430	*—262,430*
Port Alberni	.....	49,048	*—49,048*
Quesnel	1,824,875	1,206,375	618,500
Sechelt	1,348,663	1,222,261	126,402
Shuswap Falls	26,194,710	23,903,090	2,291,620
Smithers	1,894,385	1,403,997	490,388
Terrace	822,045	422,031	400,014
Vanderhoof	616,769	456,079	160,690
Westbank	1,514,255	1,133,462	380,793
Williams Lake	1,178,570	901,460	277,110
Totals	157,946,073	129,464,276	28,481,797

II. Purchased (Kwh).

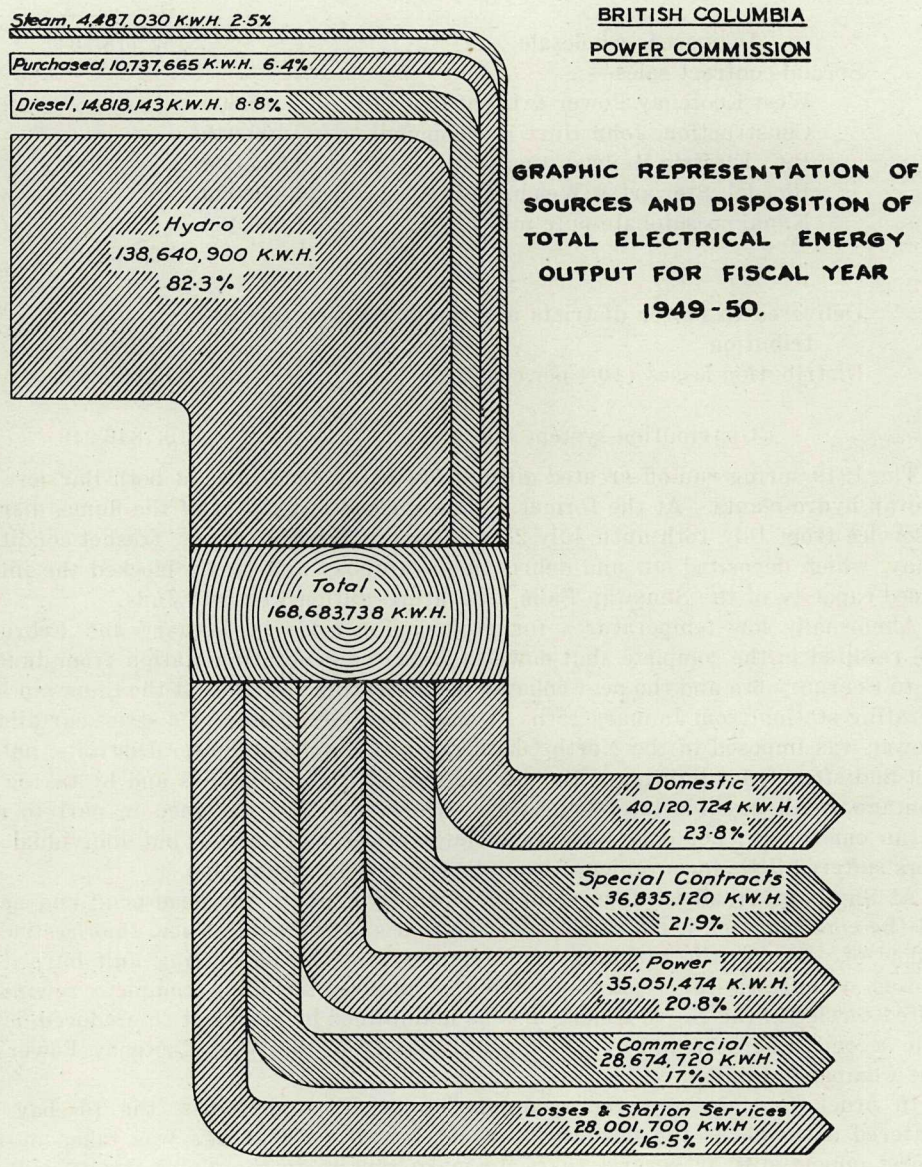
From.	Fiscal Year ended March 31.		Difference.
	1950.	1949.	
Vancouver Island Power Co., Ltd.	.....	807,250	*—807,250*
Bloedel, Stewart & Welch, Ltd.	.....	17,600	*—17,600*
Alberni Pacific Lumber Co., Ltd.	.....	28,990	*—28,990*
Canadian Collieries (D.), Ltd.	6,422,202	1,470,996	4,951,206
West Kootenay Power & Light Co., Ltd.	2,934,600	896,400	2,038,200
B.C. Electric Railway Co., Ltd.	1,116,543	.....	1,116,543
Hillcrest Lumber Co., Ltd.	264,320	.....	264,320
Totals	10,737,665	3,221,236	7,516,429

Summary.

Total generated and purchased	168,683,738	132,685,512	35,998,226
Less station services	2,085,557	1,865,162	220,395
Totals	166,598,181	130,820,350	35,777,831

Sources of Power, 1950.

	Kwh.	Per Cent.
Hydro-electric energy	138,640,900	82.3
Diesel-electric energy	14,818,143	8.8
Steam-electric energy	4,487,030	2.5
Purchased power	10,737,665	6.4
Totals	168,683,738	100.0


BRITISH COLUMBIA
POWER COMMISSION
GRAPHIC REPRESENTATION OF SOURCES AND DISPOSITION OF TOTAL ELECTRICAL ENERGY OUTPUT FOR FISCAL YEAR 1949-50.
Steam, 4,487,030 K.W.H. 2·5%
Purchased, 10,737,665 K.W.H. 6·4%
Diesel, 14,818,143 K.W.H. 8·8%
Hydro
138,640,900 K.W.H.
82·3%
Total
168,683,738 K.W.H.
Domestic
40,120,724 K.W.H.
23·8%
Special Contracts
36,835,120 K.W.H.
21·9%
Power
35,051,474 K.W.H.
20·8%
Commercial
28,674,720 K.W.H.
17%
Losses & Station Services
28,001,700 K.W.H
16·5%

Disposition of Power.

		Kwh.
Net generated and purchased, 1949–50		166,598,181
Transmission and transformation losses (8.3 per cent.)		13,880,047
Delivered, wholesale		152,718,134
Special-contract sales—		
West Kootenay Power & Light Co., Ltd.	15,600	
Construction, John Hart Development	100,040	
B.C. Electric Railway Co., Ltd.	8,544,000	
Bloedel, Stewart & Welch, Ltd.	26,879,000	
Nanaimo sulphate-pulp mill	1,296,480	
		36,835,120
Delivered to power districts and municipalities for distribution		115,883,014
Distribution losses (10.4 per cent.)		12,036,096
Distribution-system sales		103,846,918

The 1949 spring run-off created difficult operating conditions at both Barriere and Shuswap hydro-plants. At the former a slide washed away part of the flume, disrupting service from July 16th until July 23rd. On the Shuswap River, freshet conditions in May, which deposited silt and debris in the forebay and partly blocked the intake, reduced capacity of the Shuswap Falls generating-station well into June.

Abnormally low temperatures for prolonged periods in January and February, 1950, resulted in the complete shut-down of Barriere generating-station from January 18th to February 6th and the near collapse of generating facilities at the Shuswap Falls generating-station from January 15th. Under these circumstances a strict curtailment of power was imposed in the North Okanagan and Kamloops Power Districts, notably street and store-front lighting. By the exercise of such economies and by taking full advantage of all possible interconnections, which had been designed in part to meet such an emergency, not only were essential services maintained, but individual customers suffered little inconvenience through restricted consumption.

At Shuswap, frazil ice formed in the open river above the head-pond and nearly filled the confined area between the river-bottom and the surface ice, thus restricting the flow of water to the turbines. On January 21st one generating unit burned out and was withdrawn for repairs of a major nature, including complete rewinding. Limited service in the North Okanagan was maintained by means of the reduced output of the second generator and by power purchased from the West Kootenay Power and Light Company, Limited.

In order to sluice out the accumulation of silt and debris, the forebay was unwatered as much as the headworks would permit. Advantage was taken of this, the first opportunity in several years, to make repairs to the No. 2 intake grill, the intake-gate mechanism, and the trash-racks. Service was resumed by this unit on February 28th.

The effect of the abnormal winter at Barriere caused ice to form in the open flume above the siphon section, blocking the flow through the siphon. During this critical period, with the Barriere generating-stations shut down until February 9th, when normal conditions were restored, the Kamloops steam plant became the sole source of supply for Kamloops.

One turbine generator was repaired following an insulation failure at the Kamloops steam plant, while at Barriere hydro-plant constant surveillance and repairs to the flume were necessary.

Diesel generating plants at various locations were given routine repairs, mostly in the nature of main-bearing replacements.

The third and fourth generating units at the John Hart generating-station were available for service on October 21st, following which Generators No. 1 and 2 were dismantled for cleaning and final check-up.

Stream-flow in the Campbell River reached a maximum for the year of 18,200 cubic feet per second following heavy precipitation on November 26th. The maximum and minimum flows for the year were:—

	Max.	Min.		Max.	Min.
	C.F.S.	C.F.S.		C.F.S.	C.F.S.
April, 1949	4,925	2,165	October, 1949	3,460	930
May, 1949	9,050	3,305	November, 1949	7,410	1,500
June, 1949	5,850	3,210	December, 1949	18,200	1,700
July, 1949	3,025	2,105	January, 1950	5,560	2,000
August, 1949	3,210	1,715	February, 1950	5,310	720
September, 1949	1,665	980	March, 1950	4,540	2,210

2. TRANSMISSION.

132-kv System.

There were no complete interruptions to the 132-kv transmission loop on Vancouver Island and only one generating system interruption for a duration of three minutes on August 15th because of governor trouble at the John Hart generating-station, which, at the time, was undergoing construction.

Unusually severe weather conditions were experienced in the Coastal area during the months of December and January, when wet snowfalls accompanied by high winds affected the operation of the 132-kv transmission system on Vancouver Island and did extensive damage to distribution-lines on Vancouver Island and in the Hope area. The worst conditions were experienced on December 17th and 26th, 1949, and on January 10th, 1950, when the conductors of the lines in the Campbell River and Courtenay areas became loaded with ice. While no total interruptions resulted, a number of momentary disturbances were caused as the ice dropped off individual span conductors.

Following investigations of experience elsewhere, chemical treatment of regrowth on transmission-line rights-of-way on Vancouver Island was undertaken. About 77 miles of the right-of-way on the 132-kv line between Nanaimo and Port Alberni and Campbell River were treated, as well as some sections along the 60-kv Nanaimo–Duncan line.

Inspections made subsequent to the treatment showed the method to be effective and the cost to be considerably lower than that of hand-clearing.

Periodic inspections of oil circuit-breakers, transformer and oil-switch bushings, and other station equipment were organized.

The F.M. communication system between the John Hart generating-station and Port Alberni and Nanaimo required adjustments to improve reliability and quality of transmission. Following the relocation of the aerial at Nanaimo and the adoption of a different design for the directive array at the generating-station, operating results were greatly improved.

Sub-transmission Systems.

Parallel operation of the Commission's Vancouver Island system with that of the British Columbia Electric Railway Company, Limited, was initiated on November 24th and was maintained thereafter. The company's 60-kv Victoria–Duncan line was used

for the purpose, pending completion of its two 132-kv lines between Victoria and Nanaimo.

The rapid growth of load in the Nanaimo-Duncan district indicated the need for an engineering study of the 60-kv transmission system and substation facilities in order that the demands of the future may be met. This study has been undertaken.

A new 63-kv transmission-line connecting the North Okanagan transmission system with the Kamloops steam plant and the Barriere hydro-electric plant was placed in operation on June 24th, 1949. This improved the flexibility of the combined systems and permitted a reduction in the use of fuel at the steam plant.

In addition, the improvement in system power factor created better operating conditions for the Shuswap Falls generators.

A few momentary and one long accidental interruption affecting the sub-transmission-lines occurred. The 60-kv line from Nanaimo to Duncan was out of service for fifteen hours on January 10th during a very heavy snow-storm which blocked roads and interfered with communications.

The interconnection between the North Okanagan transmission system and that of the West Kootenay Power and Light Company, Limited, at Winfield was utilized to considerable advantage on several occasions.

Tests were conducted in the Kamloops-Vernon-Whatshan area to determine the practicability of using radio-telephone communication for the operation of the transmission system in the territory.

Maintenance of the lines included some insulator replacements, pole renewals, and pole stubbing. No substation maintenance of any significance was required.

3. DISTRIBUTION.

As referred to in section II-3 of this Report, the Commission acquired a number of distribution systems during the year.

These acquisitions, together with extensive rural line additions in the North Okanagan Valley and line extensions elsewhere, resulted in an addition of 8,007 services, to bring the total number being supplied on March 31st, 1950, to 39,626 customers.

The Commission was operating twenty-three power districts on March 31st, 1950, an increase of four over the previous year—Dawson Creek, Hazelton, Lake Cowichan, and Lake Windermere.

Weather conditions during November and December, 1949, and January and February, 1950, were extremely unfavourable and produced an abnormal number of service interruptions due to falling trees and ice-loading on conductors.

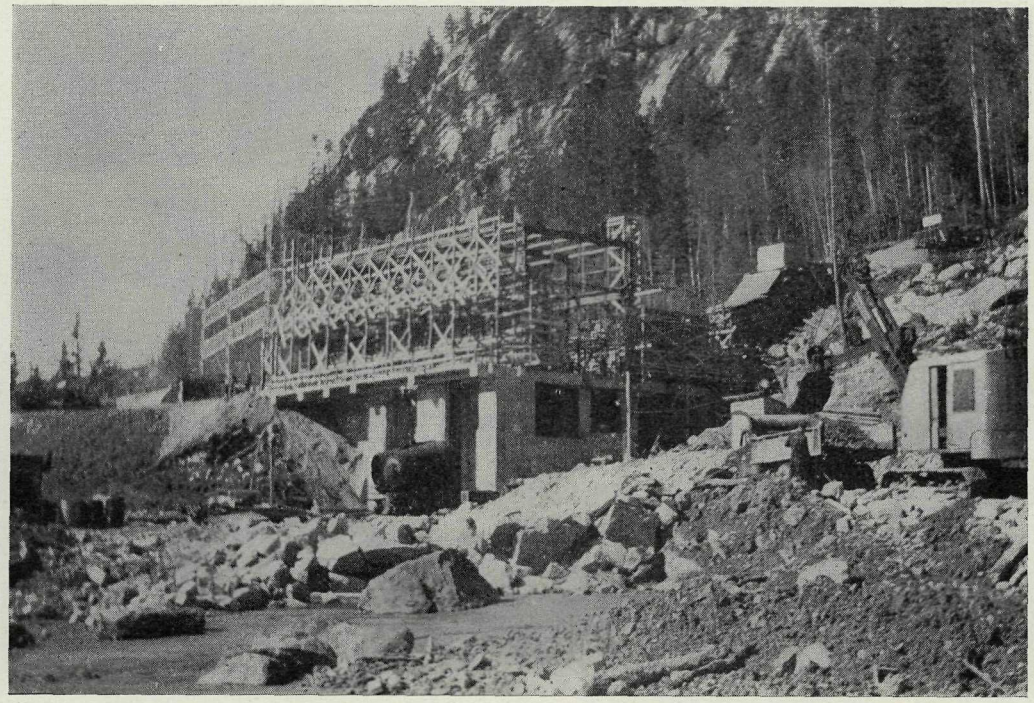
Loads continue to grow and to require added transformer and conductor capacity, largely in acquired systems which had not been reconstructed by the Commission. Of these, the distribution systems at Alberni, Port Alberni, Nanaimo–Duncan, Kamloops, and the North Okanagan Valley are examples.

Distribution-system maintenance included the butt treatment of the poles set in 1946, 1947, and 1948 during the reconstruction of local systems. In all, about 2,200 poles were treated.

The system acquired from the Heffley Irrigation Company, north of Kamloops, was rebuilt, requiring the setting of 100 poles.

Reclearing, stubbing, additional guying, cross-arm replacement, and resagging of conductors were carried out as required, except at Dawson Creek where a major reconstruction operation was in the planning stage.

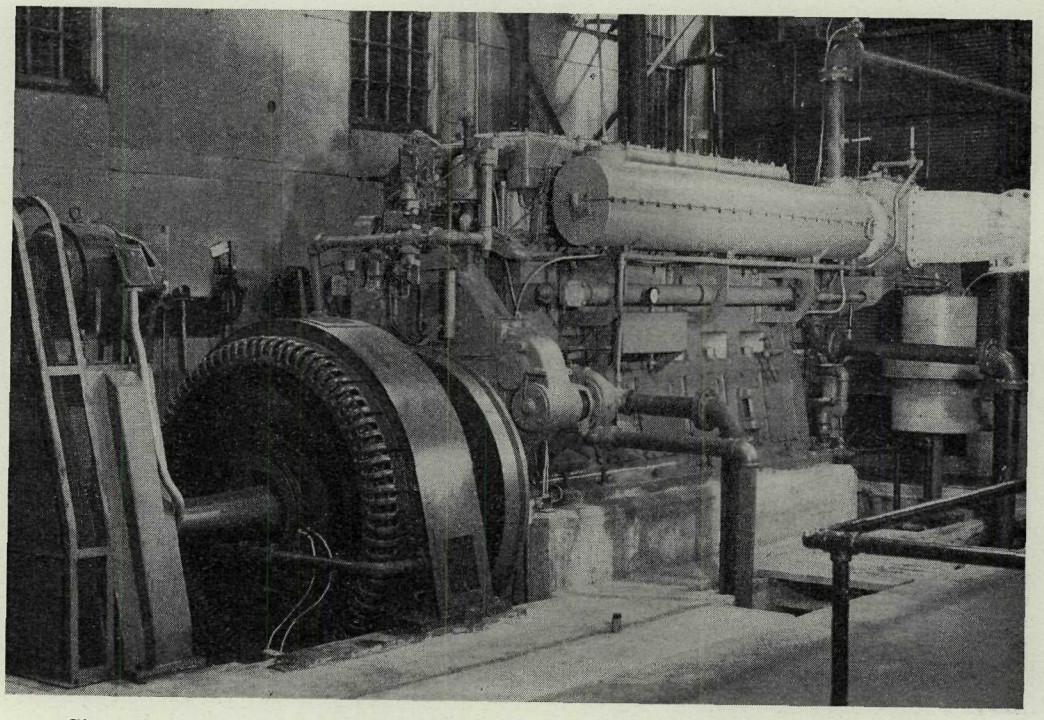
WHATSHAN DEVELOPMENT.



Power-house under construction near Needles, Lower Arrow Lake.

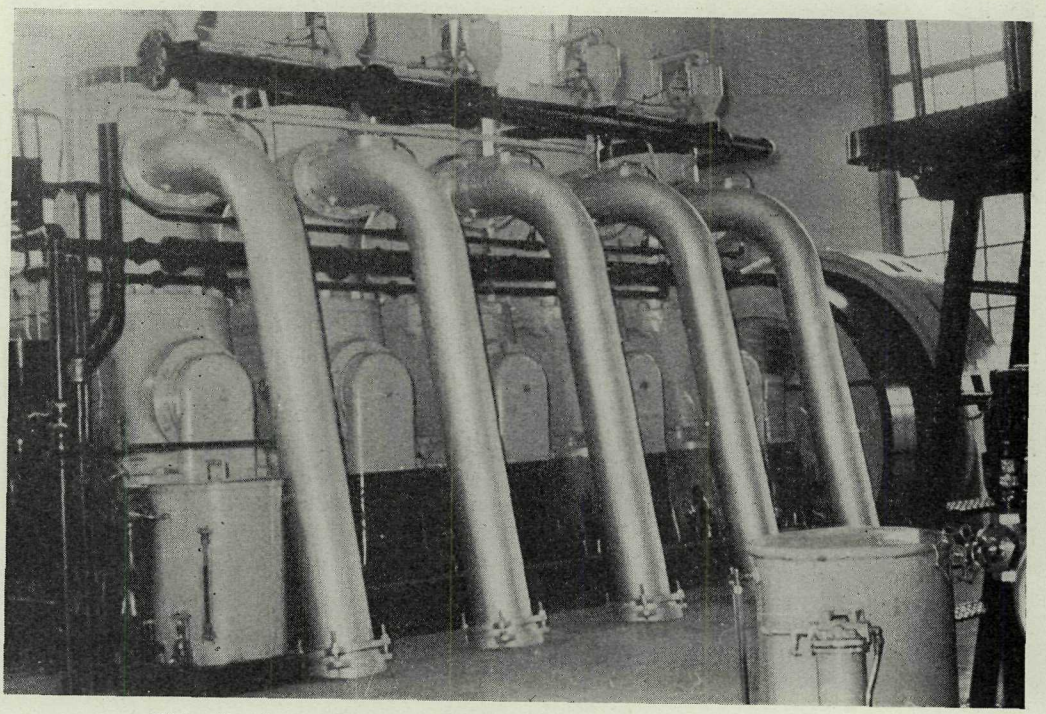
Hard-rock crew of Miners Western, Limited, at the completion of the break-through are pictured above at the Whatshan Lake tunnel entrance.

POWERFUL GAS-DIESEL GENERATOR AT DAWSON CREEK.



Six-cylinder dual-fuel diesel generating unit, installed at Dawson Creek, is to be duplicated in this plant. This generator is of 750 kva capacity.

WILLIAMS LAKE, TYPICAL DIESEL PLANT.



This diesel generator, developing 375 horse-power, is one of the major generating units in Williams Lake plant.

SUMMARY OF CIRCUIT-MILES OF DISTRIBUTION-LINES AND NUMBER OF CUSTOMERS AS AT MARCH 31ST, 1950.

Power District.	Miles of Line.	Number of Customers.	Customers per Mile.
Alberni	93.0	3,934	42.3
Alert Bay	4.2	269	64.0
Burns Lake	15.3	262	17.1
Campbell River	48.4	956	19.8
Comox Valley	98.3	2,770	28.2
Dawson Creek	66.8	1,355	20.3
Golden	10.4	242	23.3
Hazelton	10.9	151	13.9
Hope	28.9	594	20.6
Kamloops	116.1	4,156	35.8
Lake Cowichan	13.7	486	35.5
Lake Windermere	39.6	.....	.....
Lillooet	8.7	211	24.3
Nakusp	19.0	361	19.0
Nanaimo-Duncan	643.0	12,542	19.6
North Okanagan	550.9	7,584	13.8
Peachland-Westbank	32.2	491	15.2
Quesnel	25.9	688	26.6
Sechelt	41.8	1,027	24.6
Smithers	42.4	536	12.6
Terrace	17.7	413	23.3
Vanderhoof	11.7	213	18.2
Williams Lake	19.6	385	19.6
Totals	1,958.5	39,626	20.2

4. RATE SCHEDULES.

In the twelve-month period ended March, 1950, not only were promotional schedules extended to additional power districts, but the rates for primary power were reduced in four areas where Regulation No. 5 had already been introduced. This downward revision was made effective in Hope and those power districts served by the John Hart Development so as to encourage further industrial growth.

During the year, revised schedules in accordance with the provisions of Regulation No. 5 were approved for the Burns Lake, Dawson Creek, Hazelton, and Lake Cowichan Power Districts, the latter three having been acquired during the period under review. Promotional rates have now been adopted in nineteen out of the twenty-three operating power districts. In addition, the rates for the Houston Power District, where construction was still under way at the end of the fiscal year, were also established.

On Vancouver Island, only the Comox Valley Power District supplied through purchases of 25-cycle current from the Canadian Collieries plant at Puntledge and those customers of the Campbell River Power District still being served from that source remain on rates not yet revised.

In the Interior the three areas where general revisions have not yet taken place are Lillooet, Kamloops, and the North Okanagan Power Districts. In the two latter the use of electricity cannot be encouraged by more attractive rates until the existing generating capacity is augmented by the development at Whatshan. However, both these power districts have extensions where the promotional rates of Regulation No. 5 are in effect. These areas are the community of Chase, together with the line from Kamloops—all part of the Kamloops Power District, and the Falkland-Monte Lake-Westwold area of the North Okanagan Power District.

The promotional rates now in effect are contained in the following tables:—

A. Residential Service Rates.

Available for residence lighting, heating, cooking, and single-phase motors individually rated at 2 horse-power or less used for domestic purposes.

Power District and Rate Zone.	Monthly Minimum per Kw of Demand.	Block I (First 20 Kwh per Month per Kw of Demand).	Block II (Next 60 Kwh per Month per Kw of Demand).	Block III (Balance of Monthly Consumption).
	$	Cents per Kwh.	Cents per Kwh.	Cents per Kwh.
Alberni (Zone 1)	.55	7	2	8/10
,, (Zone 2)	1.00	8	2	8/10
Alert Bay	1.00	12	2½	8/10
Burns Lake	1.00	12	2½	8/10
Campbell River*	1.00	10	2	8/10
Dawson Creek	1.00	10	2½	8/10
Golden (Zone 1)	1.00	12	2½	8/10
,, (Zone 2)	1.50	12	2½	8/10
Hazelton	1.00	12	2½	8/10
Houston	1.00	12	2½	8/10
Hope	1.00	10	2½	8/10
Kamloops (Chase extension only)	1.00	10	2½	8/10
Lake Cowichan	1.00	10	2½	8/10
Lake Windermere	1.00	12	2½	8/10
Nakusp	1.00	12	2½	8/10
Nanaimo-Duncan (Zone 1)	.55	7	2	8/10
,, ,, (Zone 2)	1.00	8	2	8/10
,, ,, (Zone 3)	1.00	10	2½	8/10
North Okanagan (Falkland, etc., only)	†	12	2½	8/10
Peachland-Westbank	1.00	10	2½	8/10
Quesnel (Zone 1)	1.00	10	2½	8/10
,, (Zone 2)	1.25	12	2½	8/10
Sechelt	1.00	12	2½	8/10
Smithers	1.00	10	2½	8/10
Terrace (Zone 1)	1.00	12	2½	8/10
,, (Zone 2)	1.25	12	2½	8/10
Vanderhoof (Zone 1)	1.00	12	2½	8/10
,, (Zone 2)	1.25	12	2½	8/10
Williams Lake (Zone 1)	1.00	10	2½	8/10
,, ,, (Zone 2)	1.25	12	2½	8/10

* Available to consumers of 60-cycle power only.

† $5 is the full minimum, irrespective of kw demand rating.

Note.—Minimum demand rating, 2 kw. Discount for prompt payment, 10 per cent.

B. Summer Service Rates, Residential and Commercial.

Available for summer cottages, hotels, tourist camps, refreshment booths, and other commercial premises which normally require service during summer months only. Available May 1st to September 30th.

Power District and Rate Zone.	Annual Fixed Charge per Kw of Demand.	Block I (First 50 Kwh per Season per Kw of Demand).	Block II (Next 150 Kwh per Season per Kw of Demand).	Block III (Balance of Consumption per Season).
	$	Cents per Kwh.	Cents per Kwh.	Cents per Kwh.
Alberni (Zone 1)	6.00	8	2	½
,, (Zone 2)	6.00	8	2	½
Alert Bay	6.00	12	2½	½
Burns Lake	6.00	12	2½	½
Dawson Creek	6.00	10	2½	½
Golden (Zone 1)	6.00	12	2½	½
,, (Zone 2)	6.00	12	2½	½
Hazelton	6.00	12	2½	½
Houston	6.00	12	2½	½
Hope	6.00	10	2½	½
Lake Cowichan	6.00	10	2½	½
Lake Windermere	6.00	12	2½	½
Nakusp	6.00	12	2½	½
Nanaimo-Duncan (Zone 1)	6.00	8	2	½
,, ,, (Zone 2)	6.00	8	2	½
,, ,, (Zone 3)	6.00	10	2½	½
Peachland-Westbank	6.00	10	2½	½
Quesnel (Zone 1)	6.00	10	2½	½
,, (Zone 2)	6.00	12	2½	½
Sechelt	6.00	12	2½	½
Smithers	6.00	10	2½	½
Terrace (Zone 1)	6.00	12	2½	½
,, (Zone 2)	6.00	12	2½	½
Vanderhoof (Zone 1)	6.00	12	2½	½
,, (Zone 2)	6.00	12	2½	½
Williams Lake (Zone 1)	6.00	10	2½	½
,, ,, (Zone 2)	6.00	12	2½	½

Note.—Minimum demand rating, 2 kw. Discount for prompt payment, 10 per cent.

C. Commercial Service Rates.

Available for lighting, heating, cooking, and single-phase motors in business premises and any other premises used for commercial purposes.

Power District and Rate Zone.	Monthly Minimum per Kw of Demand.	Block I (First 30 Kwh per Month per Kw of Demand).	Block II (Next 60 Kwh per Month per Kw of Demand).	Block III (Balance of Monthly Consumption).
	$	Cents per Kwh.	Cents per Kwh.	Cents per Kwh.
Alberni (Zone 1)	1.00	8	4	½
,, (Zone 2)	1.00	8	4	½
Alert Bay	1.00	12	4	½
Burns Lake	1.00	12	4	½
Campbell River*	1.00	10	4	½
Dawson Creek	1.00	12	4	½
Golden (Zone 1)	1.00	12	4	½
,, (Zone 2)	1.50	12	4	½
Hazelton	1.00	12	4	½
Houston	1.00	12	4	½
Hope	1.00	12	4	½
Kamloops (Chase extension only)	1.00	12	4	½
Lake Cowichan	1.00	10	4	½
Lake Windermere	1.00	12	4	½
Nakusp	1.00	12	4	½
Nanaimo-Duncan (Zone 1)	1.00	8	4	½
,, ,, (Zone 2)	1.00	8	4	½
,, ,, (Zone 3)	1.00	10	4	½
North Okanagan (Falkland, etc., only)	†	12	4	½
Peachland-Westbank	1.00	12	4	½
Quesnel (Zone 1)	1.00	12	4	½
,, (Zone 2)	1.25	12	4	½
Sechelt	1.00	12	4	½
Smithers	1.00	12	4	½
Terrace (Zone 1)	1.00	12	4	½
,, (Zone 2)	1.25	12	4	½
Vanderhoof (Zone 1)	1.00	12	4	½
,, (Zone 2)	1.25	12	4	½
Williams Lake (Zone 1)	1.00	12	4	½
,, ,, (Zone 2)	1.25	12	4	½

* Available to consumers of 60-cycle power only.

† $5 for 2-kw demand plus $1 for each additional kw.

Note.—Minimum demand rating, 2 kw. Discount for prompt payment, 10 per cent.

D. Power Service Rates.

Available for motors and other electrical equipment used for commercial, manufacturing, and processing purposes where the minimum demand is not less than 3¾ kw (5 horse-power), single- or three-phase, at available secondary voltages (550/220/110 volts).

Power District.	Monthly Service Charge per Kw of Demand.	Block I (First 50 Kwh per Month per Kw of Demand).	Block II (Next 50 Kwh per Month per Kw of Demand).	Block III (Balance of Monthly Consumption).
	$	Cents per Kwh.	Cents per Kwh.	Cents per Kwh.
Alberni*	1.00	3	1½	½
Alert Bay	1.00	3	1½	½
Burns Lake	1.00	3	1½	½
Campbell River*†	1.00	3	1½	½
Dawson Creek	1.00	3	1½	½
Golden	1.00	3	1½	½
Hazelton‡	1.00	5	3	1
Houston‡	1.00	5	3	1
Hope*	1.00	3	1½	½
Kamloops (Chase extension only)	1.00	3	1½	½
Lake Cowichan	1.00	3	1½	½
Lake Windermere	1.00	3	1½	½
Nakusp	1.00	3	1½	½
Nanaimo-Duncan*	1.00	3	1½	½
North Okanagan (Falkland, etc., only)	1.00	3	1½	½
Peachland-Westbank	1.00	3	1½	½
Quesnel	1.00	3	1½	½
Sechelt	1.00	3	1½	½
Smithers	1.00	3	1½	½
Terrace	1.00	3	1½	½
Vanderhoof	1.00	3	1½	½
Williams Lake	1.00	3	1½	½

* Power loads in these districts are subject to the following quantity discounts:—

	Discount.
Up to 100 kw of billing demand	*Nil*
From 101 to 200 kw of billing demand	10%
From 201 to 500 kw of billing demand	15%
From 501 to 1,000 kw of billing demand	20%

† Available to consumers of 60-cycle power only.

‡ No prompt-payment discount granted in these districts.

Note.—Minimum demand rating, 4 kw. Discount for prompt payment, 10 per cent.

E. Primary-power Service.

Available for industries, commercial establishments, institutions, and others requiring power at primary distribution voltage (2,300 volts or higher) in excess of 50 kw at a single point of delivery.

Power District.	Monthly Service Charge per Kw of Demand.	Block I (First 50 Kwh per Month per Kw of Demand).	Block II (Next 50 Kwh per Month per Kw of Demand).	Block III (Balance of Monthly Consumption).
	Cents.	Cents per Kwh.	Cents per Kwh.	Cents per Kwh.
Alberni*	50	2½	1½	½
Alert Bay	85	3	1½	½
Burns Lake	85	3	1½	½
Campbell River*†	50	2½	1½	½
Dawson Creek	85	3	1½	½
Golden	85	3	1½	½
Hope*	50	2½	1½	½
Lake Cowichan	85	3	1½	½
Nakusp	85	3	1½	½
Nanaimo-Duncan*	50	2½	1½	½
North Okanagan (Falkland, etc., only)	85	3	1½	½
Peachland-Westbank	85	3	1½	½
Quesnel	85	3	1½	½
Sechelt	85	3	1½	½
Smithers	85	3	1½	½
Terrace	85	3	1½	½
Vanderhoof	85	3	1½	½
Williams Lake	85	3	1½	½

* Power loads in these districts are subject to the following quantity discounts:—

	Discount.
Up to 100 kw of billing demand	*Nil*
From 101 to 200 kw of billing demand	10%
From 201 to 500 kw of billing demand	15%
From 501 to 1,000 kw of billing demand	20%

† Available to consumers of 60-cycle power only.

Note.—Minimum demand rating, 50 kw. Discount for prompt payment, 10 per cent.

F. Street-Lighting Service Rates.

A uniform street-lighting schedule, based upon the capacity of the lamp ratings, is available in all power districts where Regulation No. 5 is in general use, namely: Alberni, Alert Bay, Burns Lake, Campbell River, Dawson Creek, Golden, Hazelton, Houston, Hope, Lake Cowichan, Lake Windermere, Nakusp, Nanaimo-Duncan, Peachland-Westbank, Quesnel, Sechelt, Smithers, Terrace, Vanderhoof, and Williams Lake.

Two types of street-lighting service have been made available:—

(*a*) *Overhead.*—Under which the Commission installs, owns, operates, and maintains overhead street-lighting equipment and supplies energy for the operation of lights daily from one hour after sunset until one hour before sunrise. The customer municipality pays the actual cost of materials for renewal of lamps and glassware.

(*b*) *Ornamental.*—Under which the street-lighting equipment is owned by and maintained at the expense of the customer municipality. The Commission supplies energy for the operation daily from one hour after sunset until one hour before sunrise.

The schedule of charges under each of these types of service for various lamp capacities is as follows:—

System of Wiring.	Capacity Rating of Lamp.	Net Rate per Lamp per Month.	
		Overhead.	Ornamental.
Multiple	100 watts	$1.50	$0.75
	200 watts	2.00	1.25
	300 watts	2.50	1.75
	500 watts	3.50	2.75
	1,000 watts	6.00	5.25
Series	100 candle-power	1.30	.55
	250 candle-power	1.75	1.00
	400 candle-power	2.10	1.35
	600 candle-power	2.60	1.85

G. Irrigation Service Rates.

Available for motor-driven pumps used for irrigation purposes, including testing of pipe-lines.

The following rate is available in the North Okanagan and Peachland-Westbank Power Districts:—

Rate: $5 per thirty days per horse-power of maximum demand.

Minimum contract period: 90 days.

Prompt-payment discount: 10 per cent.

In the areas where a general rate revision has not yet taken place and the schedules in force at acquisition are still in effect, there is, of course, no uniformity of structure. The main schedules operative in these several power districts are summarized below.

1. *Campbell River Power District.*

(Applicable to consumers of 25-cycle power only.)

Residential.		*Commercial.*	
Service charge	$1.00	Service charge	$1.50
First 30 kwh at	8c. per kwh	First 100 kwh at	8c. per kwh
Next 30 kwh at	5c. per kwh	Next 200 kwh at	7½c. per kwh
Next 40 kwh at	4c. per kwh	Next 200 kwh at	6c. per kwh
All over 100 kwh at	3c. per kwh	All over 500 kwh at	4c. per kwh

2. *Comox Valley Power District.*

	Courtenay.		Cumberland.	Royston.
Residential.	City.	Outside.		
First	30 kwh at 8c.	10c.	30 kwh at 10c.	30 kwh at 10c.
Next	30 kwh at 4c.	5c.	270 kwh at 4c.	———
All over	60 kwh at 2½c.	3c.	300 kwh at 3c.	30 kwh at 3c.
Minimum	$1.25	$1.50	$1.10	$2.00
Discount	10% penalty		*Nil*	*Nil*
Meter rent	*Nil*		20c.	25c.
Flat rates for water-heater—				
750 watts	$3.00		No flat rates.	No flat rates.
1,000 watts	$4.00		No flat rates.	No flat rates.

Since the above rates practically precluded the use of electric hot-water heaters for household purposes in Cumberland and Royston, the following rate, based on Regulation No. 5, has been made available.

First 60 kwh at	10c. per kwh
Next 180 kwh at	2½c. per kwh
Balance at	8/10c. per kwh
Monthly minimum	$3.00

The established meter rentals to apply. No prompt-payment discount.

In Cumberland and Royston the regular residential schedules described above apply to commercial service as well. There are no power-rate schedules in these areas.

For the Courtenay-Comox portion of the power district the commercial and power rates are as below.

Commercial.

	City.	Outside.
First 100 kwh at	8c.	10c.
Next 100 kwh at	4c.	5c.
All over 200 kwh at	2½c.	3c.
Minimum—		
2 kw or less	$1.25	$1.50
Over 2 kw	3.00	3.00

Power.

	City.	Outside.
First 500 kwh at	4c.	5c.
Next 500 kwh at	3c.	4c.
All over 1,000 kwh at	2c.	3c.
Minimum—		
2 horse-power or less	$2.00	
2 to 10 horse-power	3.00	
Over 10 horse-power	5.00	

3. *Kamloops Power District.*

Residential.

	City.	Outside.
Service charge	25c.	25c.
First 12 to 40 kwh (depending on area of residence) at	7c. per kwh	9c. per kwh
Next 200 kwh at	2½c. per kwh	3c. per kwh
Balance of monthly consumption at	1½c. per kwh	1½c. per kwh
Monthly minimum charge	$0.75	$1.00
Flat rates for water-heater—		
750 watts	$3.00	
1,000 watts	4.00	

Commercial.

First 65 kwh per kw of demand at	7c. per kwh	9c. per kwh
Next 65 kwh per kw of demand at	5c. per kwh	7c. per kwh
Balance of monthly consumption at	3c. per kwh	5c. per kwh
Minimum—		
First kw or 2 horse-power	$1.00	
Each additional ½ kw or 1 horse-power	.50	

Power.

Service charge	25c.
Demand charge	50c. per horse-power connected at 220 volts
First 50 kwh per month at	5.4c. per kwh
Next 100 kwh per month at	3.6c. per kwh
Next 1,350 kwh per month at	2.7c. per kwh
Next 1,000 kwh per month at	2.025c. per kwh
Next 4,000 kwh per month at	2.25c. per kwh
Next 5,000 kwh per month at	1.8c. per kwh
Next 10,000 kwh per month at	1.35c. per kwh
Balance of monthly consumption at	1.125c. per kwh
Monthly minimum charges—	
For 2,200-volt loads	30c. per horse-power connected, plus service charge
For 220-volt loads	50c. per horse-power connected, plus service charge

4. *Lillooet Power District.*

Residential and Commercial.

First 35 kwh at	15c. per kwh
Balance at	2½c. per kwh
Minimum bill	$2.00

Power.

All energy at	2½c. per kwh
Minimum bill	$2.50, or $1.25 per horse-power connected

5. *North Okanagan Power District.*

Residential.

First 30 kwh at	10c. per kwh
Next 60 kwh at	3c. per kwh
Next 100 kwh at	2½c. per kwh
Balance at	1½c. per kwh
Monthly minimum	$3.00 net

Or

First 30 kwh at	12c. per kwh
Next 30 kwh at	10c. per kwh
Balance at	5c. per kwh
Monthly minimum—	
Within city limits of Vernon, Armstrong, Enderby, or Salmon Arm	$1.00 net
Elsewhere	$2.00 net
Prompt-payment discount—	
Within City of Vernon	20%
Elsewhere	10%
Flat rates for water-heater—	
750 watts	$3.00
1,000 watts	$4.00

Commercial.

Demand charge	$1.00 per kw of maximum demand
First 60 kwh at	6c. per kwh
Next 440 kwh at	5c. per kwh
Next 1,000 kwh at	4c. per kwh
Next 1,000 kwh at	3c. per kwh
Next 1,000 kwh at	2c. per kwh
Balance at	1½c. per kwh
Monthly minimum	Demand charge, but not less than $2.00
Prompt-payment discount	10%

Power.

1 to 20 horse-power—	
First 200 kwh at	5c. per kwh
Next 800 kwh at	3½c. per kwh
Next 1,000 kwh at	3c. per kwh
Next 1,000 kwh at	2½c. per kwh
Balance at	1½c. per kwh
Monthly minimum	$1.00 per horse-power connected, but not less than $3.00 net
Over 20 horse-power—	
First 500 kwh at	3c. per kwh
Next 800 kwh at	2½c. per kwh
Balance at	1½c. per kwh
Monthly minimum	75c. per horse-power connected
Prompt-payment discount	10%

V. SURVEYS AND INVESTIGATIONS.

1. POWER PROJECTS.

The principal survey work carried out during the past year has been an investigation of hydro-electric power-development possibilities on Quesnel River. This investigation included topographical surveys and geological investigations at five separate power-sites and a storage-dam site at the outlet from Quesnel Lake. Studies of the data obtained indicate a potentiality of at least 400,000 horse-power on Quesnel River. The most suitable power-site for initial development appears to be at Little Canyon, about 16 miles from Quesnel. A detailed report on these investigations has been prepared and will be submitted to the Government early in the forthcoming fiscal year.

Studies based on surveys made during 1948 for a proposed hydro-electric power-development at Clowhom Falls were continued and indicated the possibility of installing initially two 2,000-horsepower generating units and delivering power to Sechelt at an estimated cost of $965,000. The proposed power plant would be designed for future expansion, up to at least 12,000 horse-power if required. The undertaking of the initially proposed power-development was approved by the Lieutenant-Governor in Council on January 20th, 1950, following which certain supplementary surveys were undertaken and the detailed preparation of plans and specifications was commenced. Tenders for the supply of turbines and generators had also been invited before the end of the fiscal year.

Surveys for a small hydro-electric development on Sugsaw Creek to supply Bamfield, at the entrance to Alberni Inlet, were completed. Surveys were also made covering a power-site on Scuzzy Creek, near North Bend in the Fraser Canyon. The preliminary estimates indicated that neither of these projects was economical.

2. TRANSMISSION PROJECTS.

Preliminary surveys and engineering studies have been made covering a 60-kv. transmission-line from Duncan to Cowichan Lake. It is probable that this transmission-line, if constructed, will be operated initially at 23 kv until load requirements are more clearly defined and demand is sufficient to require 60-kv operation.

Preliminary studies have also been made covering construction of a 60-kv line between Vernon and Armstrong to replace the existing 33-kv line which is becoming inadequate to meet load requirements. The investigations, which will be continued during the coming year, include extension of this projected line northward to Enderby and Salmon Arm and later connecting to Kamloops, thus providing a duplicate to the transmission-line between Vernon and Kamloops completed early this year and which followed a more direct route through Falkland and Westwold.

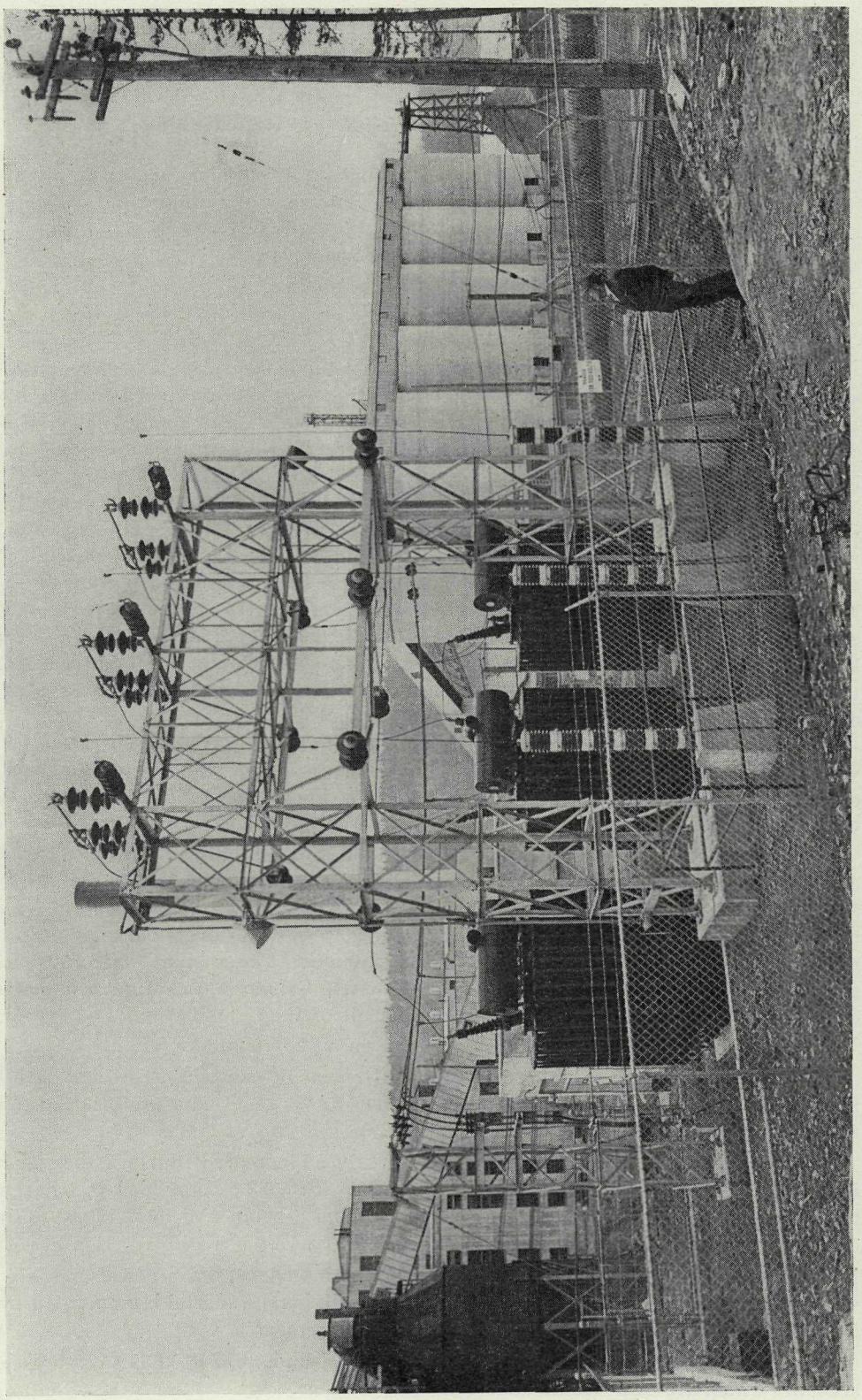
3. DISTRIBUTION PROJECTS.

Surveys were made during the year for distribution projects to serve the following communities: Alert Bay, extension to Sointula; Hazelton; Houston; Ucluelet-Tofino; Windermere, including Athalmer, Wilmer, Invermere, Edgewater, and Radium Hot Springs. Construction of these projects was authorized during the year and, except for the Sointula extension and the Ucluelet-Tofino area, work is now well advanced.

Surveys were also made in respect of a number of extensions, among the larger of which may be mentioned Gabriola and Quadra Islands, Savona near Kamloops, 150-Mile House from Williams Lake, the Lakes District near Vanderhoof, and the Nakusp-Edgewood area. Improvements and reconstruction, where necessary, of the recently acquired distribution systems at Ladysmith, Lake Cowichan, and Merritt were also studied preparatory to undertaking work in these communities during the coming fiscal year.

Customer appliance surveys and complete engineering studies were made covering the rather intricate problem of converting the Comox Valley area from 25-cycle to 60-cycle power. It is believed that a sound scheme which will result in the minimum possible inconvenience to customers has been developed. This will be proceeded with during the forthcoming year.

POWER VITAL TO INDUSTRY.



12,000-kva substation at Nanaimo sulphate-pulp plant, Cedar, Vancouver Island. Storage-bins, hopper, and, behind the substation steel, the lofty smoke-stack of the pulp plant are visible.

VI. FINANCIAL.

The following statements are presented to show the financial results of the operation of the undertakings of the Commission for the fiscal year ended March 31st, 1950, and the financial position of the Commission at March 31st, 1950:—

1. Balance-sheet.
2. Combined Operations: Financial Summary—Revenue and Expenses.
3. Power Distribution—All Districts: Summary of Revenue and Expenses.
4. Power Distribution by Districts:—
   (*a*) Summary of Revenue and Expenditure.
   (*b*) Accumulated Stabilization Reserve.
5. Plant and Related Reserves.
6. Construction Work in Progress.

Condensed comparative summaries showing revenue, operating expenses, operating surplus, provisions for reserves, and net operating surplus are shown in the General Review section at the beginning of this Annual Report. Further details relative to total operating costs, allocation of cost of power, distribution expenses by separate power districts, customers, etc., are shown on Statements 2, 3, and 4.

The wholesale cost of power delivered to individual districts is determined by the Commission in accordance with section 26 of the "Electric Power Act," separate cost records being maintained for each generation and transmission unit operated. From the total cost of generation and transmission thus obtained, special power sales (sections 21 and 22, "Electric Power Act") are deducted (*see* Statement 3), and the combined net cost of power is determined. This is distributed at the resulting average kwh rate to each power district on the basis of the kwh volume of power received into the district distribution system. Statement 4 shows the detailed distribution of the cost of power to all power districts operated.

The values shown on the balance-sheet for plant and equipment in operation include valuations established by the Commission in respect to properties acquired by expropriation proceedings in August and September, 1945, the compensation for which has not yet been finally determined.

Capital funds for construction purposes and for refunding of previous Governmental borrowings during the year under review were obtained by an issue of $7,000,000 3-per-cent. 1967 bonds and by borrowings on notes from a chartered bank in the amount of $7,075,000. Both these borrowings are guaranteed as to principal and interest by the Government of the Province of British Columbia. The amount of $6,500,000 was paid to the Minister of Finance, Province of British Columbia, to refund a like amount of Treasury bills issued by the Province on behalf of the Commission.

Full provision has been made for interest on all borrowings.

Requirements of the sinking fund for retirement of capital borrowings have been met in full to date as provided by the "Electric Power Act" and are on deposit with the Minister of Finance.

The maintenance and renewals reserve was increased during the year by $159,924.81, representing the difference between $570,893.67 provided by charges to operation and $310,968.86 actually expended, leaving a balance of $679,490.34 at credit of this reserve account as at March 31st, 1950.

Details of the individual amounts of both maintenance and renewals reserve and sinking fund reserve balances applicable to the individual undertaking operated by the Commission at March 31st, 1950, are set out in Statement 5.

Included in "Accounts receivable—Other" is an amount of $10,559.55, representing accounts which are over ninety days old.

In connection with "Accounts receivable—Light and Power Customers," a reserve for bad debts in the amount of $5,752.36 was provided at March 31st, 1950. This amount has been deducted to produce the total shown on the balance-sheet under this heading.

In addition to the $10,000 contractors' deposits shown on the balance-sheet, the Commission holds $200,000 in bonds from Miners Western, Limited, and $30,000 in bonds from Northern Construction and J. W. Stewart, Limited, These bonds, guaranteeing performance of contracts, are held in safe-keeping by The Canadian Bank of Commerce, Victoria.

The total of organization expense carried forward at April 1st, 1949, has been reduced by write-off of $15,906.03 to $127,248.22 at March 31st, 1950.

Provision has been made for amortization of bond discount over the term of the bonds. The amount of $2,650.28 was written off in the period under review.

The balance in the employer-employee contributory superannuation fund was $473,469.83 as at March 31st, 1950, according to the records of the Superannuation Commissioner appointed as administrator of the fund and the trustees in control of the relative investments.

In accordance with the provisions of the "Electric Power Act," the accounts of the Commission have been verified by auditors appointed by the Lieutenant-Governor in Council, and their certificate, relative to the financial records for the year, balance-sheet as at March 31st, 1950, and supporting statements, is included in this section.

AUDITORS' REPORT.

We have examined the balance-sheet of the British Columbia Power Commission as at March 31, 1950, and the attached statement of combined operations for the year ended on that date, and have obtained all the information and explanations we have required. In connection therewith we examined or tested accounting records of the Commission and other supporting evidence but we did not make a detailed audit of the transactions.

Proceedings are still in progress under the terms of the "Electric Power Act" to determine the compensation to be paid for certain properties expropriated and at this date judgment has not been entered. However, reasons for judgment have been handed down and the compensation awarded therein exceeds by $1,099,532 the estimated liability contained in the balance-sheet. The matter of costs and certain aspects affecting interest have yet to be determined.

Negotiations are now being conducted with a view to obtaining the authorization of the Lieutenant-Governor in Council for deferment of sinking fund payments, as provided under Section 53 of the "Electric Power Act," with respect to sums borrowed during the year ended March 31, 1950.

No provision has been made for any additional liability that may be incurred as a result of certain claims submitted by contractors and suppliers.

Subject to the foregoing comments, we report that, in our opinion, the attached balance-sheet and related statement of combined operations have been drawn up so as to exhibit a true and correct view of the state of the affairs of the British Columbia Power Commission as at March 31, 1950, and the results of its operations for the year ended on that date, according to the best of our information and the explanations given to us and as shown by the books of the Commission.

ISMAY, BOISTON, DUNN & CO.
Chartered Accountants.

Victoria, B.C.,
June 12, 1950.

BALANCE-SHEET AS

ASSETS.

Capital assets—			
Plant and equipment in operation at values estimated by the Commission at dates of acquisition plus rehabilitations and additions at cost—			
Generation			$18,081,013.84
Transmission			5,484,615.25
Distribution			7,182,200.02
General			660,875.56
			$31,408,704.67
Construction work in progress—			
Generation		$3,479,400.09	
Transmission		1,499,764.53	
Distribution		859,835.88	
General		84,632.53	
			5,923,633.03
Total plant and equipment			$37,332,337.70
Purchase of acquired properties (pending classification)			54,658.75
Surveys and investigations			57,119.81
Plant-acquisition adjustments			474,283.38
Total capital assets			$37,918,399.64
Current assets—			
Cash on hand and in banks		$1,108,499.08	
Accounts receivable—			
Light and power customers	$215,559.94		
Other	35,823.38		
		251,383.32	
Inventories of construction and operating stores and supplies		614,801.26	
Unexpired insurance and sundry prepaid items		38,784.79	
Total current assets			2,013,468.45
Deferred charges, *less* amounts written off—			
Organization and preliminary expenses		$127,248.22	
Bond discount		92,759.72	
			220,007.94
Sinking fund for retirement of capital borrowings, deposited with Minister of Finance			857,826.03
			$41,009,702.06

AT MARCH 31ST, 1950. Statement 1.

LIABILITIES.

Capital liabilities—		
Bank loans		$7,075,000.00
Advances from the Government of the Province of British Columbia		21,895,800.00
Bonds payable (3%, 1967)		7,000,000.00
Estimated liability in respect to acquired tangible plant and equipment for which compensation has not been finally determined		358,671.44
Deferred agreement payable—purchased plant		247,563.23
Total capital liabilities		$36,577,034.67
Current liabilities—		
Accounts payable and accrued charges	$705,298.09	
Gross revenue taxes in respect of light and power service in municipal areas (section 62)	64,343.90	
Accrued interest on capital borrowings	125,360.29	
Contractors' deposits	10,000.00	
Customers' deposits	158,624.57	
Total current liabilities		1,063,626.85
General reserves—		
Maintenance and renewals	$679,490.34	
Gross revenue assessments, unorganized areas (section 64)	87,515.18	
Interest	354,070.42	
Contingencies	557,506.26	
		1,678,582.20
Stabilization reserve—		
Balance April 1st, 1949	$679,980.31	
Surplus from operations, year to March 31st, 1950	152,652.00	
		832,632.31
Sinking fund reserve		857,826.03
		$41,009,702.06

Statement 2.

COMBINED OPERATIONS: FINANCIAL SUMMARY—REVENUE AND EXPENSES—FOR THE YEAR ENDED MARCH 31ST, 1950.

	Total.
REVENUE—	
Power districts—	
Electrical-energy sales	$3,080,389.22
Miscellaneous revenue	31,190.75
	$3,111,579.97
Special-contract sales and related revenues	155,889.18
	$3,267,469.15

EXPENSES—	OPERATING COSTS.			
	Generation.	Transmission.	Distribution.	
Direct—				
Labour	$287,353.32	$8,836.79	$150,446.38	$446,636.49
Fuel	298,762.52			298,762.52
Other operating expenses	70,684.73	4,337.43	43,041.77	118,063.93
Customer accounting			177,764.18	177,764.18
Gross revenue, 3% assessments			91,796.70	91,796.70
Administration and general expenses	77,929.20	2,218.17	90,146.14	170,293.51
Purchased power	93,377.51			93,377.51
	$828,107.28	$15,392.39	$553,195.17	$1,396,694.84
Interest on investment in operated plant	327,432.49	151,960.17	191,421.79	670,814.45
	$1,155,539.77	$167,352.56	$744,616.96	$2,067,509.29

OPERATING SURPLUS (excluding provision for reserves)	$1,199,959.86

Provision for reserves—				
Maintenance and renewals	$195,090.84	$94,728.79	$264,597.06	$554,416.69
Sinking fund	163,715.79	75,980.06	95,710.44	335,406.29
Contingencies	68,062.44	16,479.00	72,943.44	157,484.88
	$426,869.07	$187,187.85	$433,250.94	$1,047,307.86

NET OPERATING SURPLUS, year ended March 31st, 1950 (transferred to stabilization reserve)	$152,652.00

Statement 3.

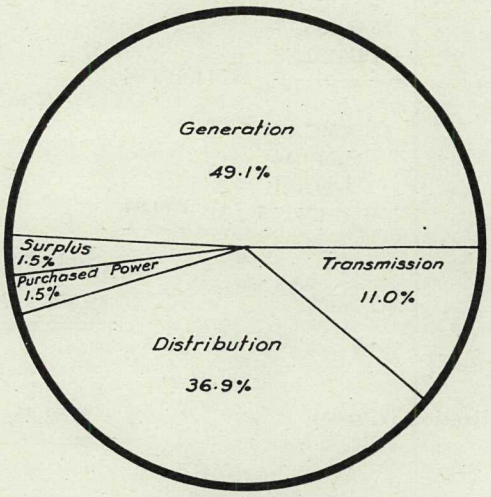
POWER DISTRIBUTION—ALL DISTRICTS: SUMMARY OF REVENUE AND EXPENSES FOR THE TWELVE-MONTH PERIOD ENDED MARCH 31ST, 1950.

REVENUE—			
Electrical-energy sales			$3,080,389.22
Miscellaneous revenue			31,190.75
Total power district revenue			$3,111,579.97
EXPENSES (detailed on Statement 2)—			
Cost of power—			
Direct expenses—			
Generation	$1,155,539.77		
Transmission	167,352.56		
		$1,322,892.33	
Provision for reserves—			
Generation	$426,869.07		
Transmission	187,187.85		
		614,056.92	
		$1,936,949.25	
Less special-contract sales and related revenues		155,889.18	
Cost of power delivered to distribution systems			$1,781,060.07
Distribution services—			
Direct expenses—			
Operating and administrative	$553,195.17		
Interest on distribution plant	191,421.79		
		$744,616.96	
Provision for reserves—			
Maintenance and renewals	$264,597.06		
Sinking fund	95,710.44		
Contingencies	72,943.44		
		433,250.94	
Total distribution services			1,177,867.90
Total expenses			$2,958,927.97
NET OPERATING SURPLUS (transferred to stabilization reserve)			$152,652.00

BRITISH COLUMBIA POWER COMMISSION

DISTRIBUTION OF REVENUE BY FUNCTIONS

FUNCTION	1948-9.	1949-50.
Generation	1,253,980.34	1,489,031.33
Transmission	281,243.20	354,540.41
Distribution	942,310.02	1,177,867.90
Power Purchased	35,427.03	93,377.51
Net Surplus	37,302.69	152,652.00
Total	2,550,263.28	3,267,469.15



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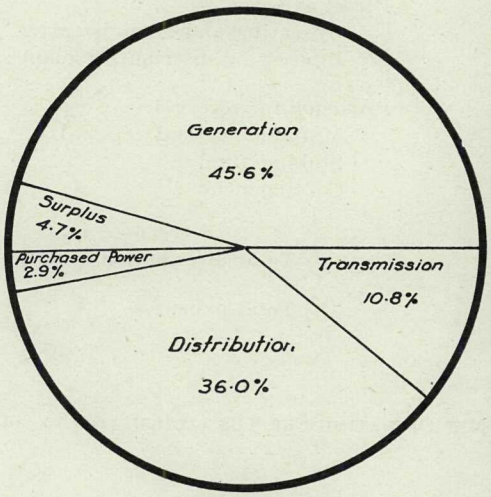
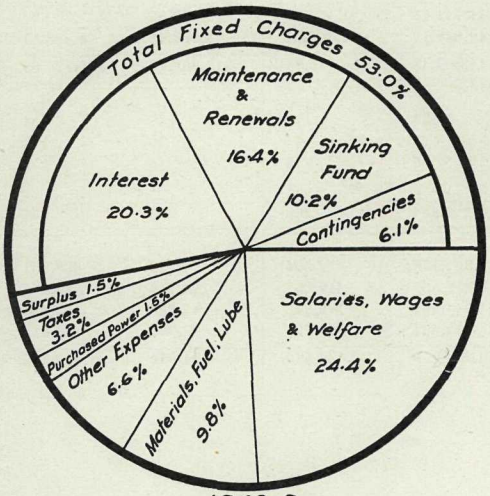


1949-50

BRITISH COLUMBIA POWER COMMISSION

DISPOSITION OF REVENUE

	1948-9.	1949-50.
Fixed Charges:		
Maintenance & Renewals	418,370.03	554,416.69
Interest	519,378.47	670,814.45
Sinking Fund	260,036.65	335,406.29
Contingencies	154,769.86	157,484.88
Total	1,352,555.01	1,718,122.31
Salaries, Wages & Welfare	621,490.86	676,869.06
Materials, Fuel & Lube.	249,348.29	337,777.41
Other Expenses	173,315.08	186,709.57
Taxes	80,824.32	101,961.29
Purchased Power	35,427.03	93,377.51
Net Surplus	37,302.69	152,652.00
Total	2,550,263.28	3,267,469.15



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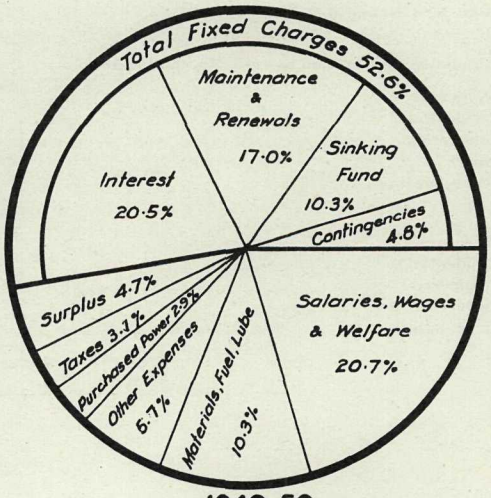

1949-50

POWER DISTRIBUTION

(a) Summary of Revenue and Expenditure for the

(b) Accumulated Stabilization

	The Albernis.	Alert Bay.	Burns Lake.	Campbell River.
Revenue—				
Sales to municipalities	.....	.....	.....	.....
Residential	$147,834.51	$11,880.90	$5,102.24	$36,238.20
Commercial	83,036.08	10,458.64	7,367.02	24,327.20
Summer	.....	.....	.....	.....
Power	7,192.38	3,638.55	912.12	5,745.58
Irrigation power	.....	.....	.....	.....
Primary power	23,983.30	.....	.....	.....
Street-lighting	7,284.06	750.15	618.16	671.54
Sub-total	$269,330.33	$26,728.24	$13,999.54	$66,982.52
Miscellaneous	4,660.08	326.84	160.97	463.34
Total revenue	$273,990.41	$27,055.08	$14,160.51	$67,445.86
Expenses—				
Allocated cost of power production	$172,786.60	$15,079.20	$5,849.03	$27,960.64
Distribution expenses, direct—				
Operating and administrative	46,652.24	7,328.50	4,432.15	13,848.76
Interest on distribution investment	16,324.93	1,121.07	1,038.73	6,219.51
	$235,763.77	$23,528.77	$11,319.91	$48,028.91
Operating surplus before provision for distribution reserves	$38,226.64	$3,526.31	$2,840.60	$19,416.95
Provision for distribution reserves—				
Maintenance and renewals	$27,069.61	$1,229.74	$1,155.87	$5,576.24
Sinking fund	8,162.43	560.53	519.31	3,109.78
Contingencies	7,439.28	268.80	72.36	.....
	$42,671.32	$2,059.07	$1,747.54	$8,686.02
Surplus for year ended March 31st, 1950	—*$4,444.68*	$1,467.24	$1,093.06	$10,730.93
Stabilization reserve, April 1st, 1949	49,949.16	24,308.64	12,715.43	4,596.87
Accumulated stabilization reserve, March 31st, 1950	$45,504.48	$25,775.88	$13,808.49	$15,327.80
Customers—				
Residential	3,354	179	186	794
Commercial	526	78	70	151
Power	52	10	5	9
Street-lighting	2	2	1	2
	3,934	269	262	956
Kwh—				
Residential	4,961,178	312,594	77,432	668,051
Commercial	3,218,867	319,851	174,199	563,367
Power	1,944,961	173,343	47,738	163,895
Street-lighting	173,894	28,796	22,301	27,019
	10,298,900	834,584	321,670	1,422,332

Statement 4.

BY DISTRICTS.

TWELVE-MONTH PERIOD ENDED MARCH 31ST, 1950, AND

RESERVE AS AT THAT DATE.

Comox Valley.	Dawson Creek.	Golden.	Hazelton.	Hope.	Kamloops.	Lake Cowichan.	Lillooet.
.....	.....	.....	.....	.....	.....	.....	.....
$108,602.24	$37,671.29	$8,692.40	$1,676.35	$20,696.73	$148,675.32	$9,645.54	$7,769.87
59,351.00	53,373.83	9,876.01	1,490.47	17,673.17	189,534.87	8,351.60	8,205.45
.....	.....	.....	.....	.....	.....	.....	.....
10,727.61	7,983.35	510.46	643.48	3,568.82	77,781.92	16.00	2,166.62
.....	.....	.....	.....	.....	17,038.65	.....	.....
.....	17,311.30	.....	.....	246.06	4,648.31	.....	.....
7,040.13	2,576.25	1,302.00	.....	1,190.50	3,687.81	89.76	351.40
$185,720.98	$118,916.02	$20,380.87	$3,810.30	$43,375.28	$441,366.88	$18,102.90	$18,493.34
1,727.50	921.89	335.53	33.94	996.57	881.01	77.87	1.63
$187,448.48	$119,837.91	$20,716.40	$3,844.24	$44,371.85	$442,247.89	$18,180.77	$18,494.97
$87,597.89	$33,916.54	$8,839.92	$1,602.28	$26,887.59	$228,717.39	$4,132.54	$7,993.97
40,018.14	16,443.95	7,474.21	1,429.67	10,495.78	63,234.35	3,270.06	6,928.56
11,002.23	3,909.65	1,686.98	434.14	3,442.28	18,325.01	814.78	888.73
$138,618.26	$54,270.14	$18,001.11	$3,466.09	$40,825.65	$310,276.75	$8,217.38	$15,811.26
$48,830.22	$65,567.77	$2,715.29	$378.15	$3,546.20	$131,971.14	$9,963.39	$2,683.71
$14,580.31	$4,688.99	$1,795.61	$457.66	$3,710.60	$30,540.80	$1,350.28	$1,333.82
5,501.10	1,954.78	843.47	217.07	1,721.13	9,162.45	407.37	444.43
1,108.08	.....	968.64	.....	1,321.32	6,452.16	.....	91.08
$21,189.49	$6,643.77	$3,607.72	$674.73	$6,753.05	$46,155.41	$1,757.65	$1,869.33
$27,640.73	$58,924.00	*—$892.43*	*—$296.58*	*—$3,206.85*	$85,815.73	$8,205.74	$814.38
16,685.85	.....	16,137.41	.....	17,141.55	150,222.48	.....	*—6.50*
$44,326.58	$58,924.00	$15,244.98	*—$296.58*	$13,934.70	$236,038.21	$8,205.74	$807.88
2,371	1,031	173	109	468	3,257	412	150
352	284	62	41	117	779	72	45
43	38	6	1	8	118	1	15
4	2	1	.....	1	2	1	1
2,770	1,355	242	151	594	4,156	486	211
2,059,626	576,005	168,454	33,625	544,149	4,512,023	111,310	98,745
1,548,844	839,652	290,431	31,659	579,248	3,815,925	110,564	248,445
373,740	455,775	7,940	26,128	200,091	4,723,241	9	83,936
211,374	36,968	41,899	.....	54,195	170,104	2,992	15,960
4,193,584	1,908,400	508,724	91,412	1,377,683	13,221,293	224,875	447,086

POWER DISTRIBUTION

(a) Summary of Revenue and Expenditure for the

(b) Accumulated Stabilization

	Nakusp.	Nanaimo-Duncan.	North Okanagan.	Peachland-Westbank.
Revenue—				
Sales to municipalities	.....	$20,516.00	.....	.....
Residential	$13,435.91	439,430.33	$315,280.21	$18,778.35
Commercial	6,761.13	269,599.68	170,180.39	9,135.29
Summer	.....	325.51	.....	.....
Power	421.08	42,384.28	150,573.01	6,623.68
Irrigation power	.....	.....	8,309.08	1,905.88
Primary power	.....	117,788.06	.....	.....
Street-lighting	360.00	16,476.86	12,034.99	870.00
Sub-total	$20,978.12	$906,520.72	$656,377.68	$37,313.20
Miscellaneous	329.73	10,483.53	6,501.17	240.61
Total revenue	$21,307.85	$917,004.25	$662,878.85	$37,553.81
Expenses—				
Allocated cost of power production	$8,707.16	$654,075.32	$363,529.83	$22,008.80
Distribution expenses, direct—				
Operating and administrative	8,102.94	145,030.33	107,564.90	9,721.12
Interest on distribution investment	2,285.42	60,527.28	40,526.53	3,929.42
	$19,095.52	$859,632.93	$511,621.26	$35,659.34
Operating surplus before provision for distribution reserves	$2,212.33	$57,371.32	$151,257.59	$1,894.47
Provision for distribution reserves—				
Maintenance and renewals	$2,438.98	$100,343.92	$43,850.18	$4,153.19
Sinking fund	1,142.66	30,263.56	20,263.26	1,964.68
Contingencies	1,258.08	27,482.64	16,715.16	2,262.00
	$4,839.72	$158,090.12	$80,828.60	$8,379.87
Surplus for year ended March 31st, 1950	*—$2,627.39*	*—$100,718.80*	$70,428.99	*—$6,485.40*
Stabilization reserve, April 1st, 1949	907.26	120,449.03	164,013.36	*—3,559.06*
Accumulated stabilization reserve, March 31st, 1950	*—$1,720.13*	$19,730.23	$234,442.35	*—$10,044.46*
Customers—				
Residential	285	10,696	6,296	398
Commercial	68	1,684	1,031	71
Power	7	149	249	20
Street-lighting	1	13	8	2
	361	12,542	7,584	491
Kwh—				
Residential	288,992	13,787,333	9,163,547	445,273
Commercial	168,762	9,910.654	3,937,094	255,698
Power	6,860	14,405,610	8,936,704	433,152
Street-lighting	7,690	610,789	490,284	34,070
	472,304	38,714,386	22,527,629	1,168,193

Statement 4—*Continued.*

BY DISTRICTS—*Continued.*

TWELVE-MONTH PERIOD ENDED MARCH 31ST, 1950, AND RESERVE AS AT THAT DATE—*Continued.*

Quesnel.	Sechelt.	Smithers.	Terrace.	Vanderhoof.	Williams Lake.	Totals.
.....	.....	.....	.....	.....	.....	$20,516.00
$22,004.89	$38,794.26	$20,670.41	$14,296.73	$7,325.58	$12,718.04	1,447,220.30
24,771.04	12,007.80	17,006.03	8,667.07	7,784.69	19,239.98	1,018,198.44
.....	1,080.81	.....	.....	.....	.....	1,406.32
2,853.83	716.13	9,862.89	2,391.44	637.83	2,867.45	340,218.51
.....	.....	.....	.....	.....	.....	27,253.61
1,464.10	171.65	.....	.....	.....	.....	165,612.78
1,059.18	504.22	1,204.65	522.00	577.60	792.00	59,963.26
$52,153.04	$53,274.87	$48,743.98	$25,877.24	$16,325.70	$35,617.47	$3,080,389.22
931.59	609.00	468.91	373.68	206.47	458.89	31,190.75
$53,084.63	$53,883.87	$49,212.89	$26,250.92	$16,532.17	$36,076.36	$3,111,579.97
$26,046.63	$19,629.81	$28,498.45	$11,615.24	$8,401.12	$17,184.12	$1,781,060.07
10,738.16	14,208.65	12,135.08	8,252.41	7,150.81	8,734.40	553,195.17
3,672.22	6,307.83	4,243.36	1,732.46	1,237.31	1,751.92	191,421.79
$40,457.01	$40,146.29	$44,876.89	$21,600.11	$16,789.24	$27,670.44	$2,525,677.03
$12,627.62	$13,737.58	$4,336.00	$4,650.81	*—$257.07*	$8,405.92	$585,902.94
$3,980.65	$6,686.53	$4,480.38	$1,919.20	$1,331.05	$1,923.45	$264,597.06
1,836.08	3,153.87	2,121.68	866.23	618.62	875.95	95,710.44
594.60	2,549.04	2,013.24	894.84	725.04	727.08	72,943.44
$6,411.33	$12,389.44	$8,615.30	$3,680.27	$2,674.71	$3,526.48	$433,250.94
$6,216.29	$1,348.14	*—$4,279.30*	$970.54	*—$2,931.78*	$4,879.44	$152,652.00
34,397.60	11,086.88	20,586.58	6,131.36	8,736.74	25,479.67	679,980.31
$40,613.89	$12,435.02	$16,307.28	$7,101.90	$5,804.96	$30,359.11	$832,632.31
510	892	396	328	144	259	32,688
151	126	117	73	62	110	6,070
25	7	21	11	6	15	816
2	2	2	1	1	1	52
688	1,027	536	413	213	385	39,626
430,700	591,434	567,052	256,957	173,711	292,533	40,120,724
708,675	409,694	528,626	228,086	217,696	568,683	28,674,720
282,410	11,526	428,428	154,869	11,221	99,413	32,970,990
25,625	16,503	43,400	18,140	22,160	26,321	2,080,484
1,447,410	1,029,157	1,567,506	658,052	424,788	986,950	103,846,918

Statement 5.

PLANT AND RELATED RESERVES AS AT MARCH 31ST, 1950.

Undertaking.	Plant Cost.					Maintenance and Renewals Reserve as at Mar. 31, 1950.	Sinking Fund Reserve as at Mar. 31, 1950.
	Plant in Operation.			Plant-acquisition Adjustments, Mar. 31, 1950.	Total Plant Cost, Mar. 31, 1950.		
	Totals as at Mar. 31, 1949.	Additions, Year ended, Mar. 31, 1950.	Totals as at Mar. 31, 1950.				
Generating Plant.							
The Albernis	$153,567.25	*—$17,364.00*	$136,203.25	$634.07	$136,837.32	$10,021.62	$10,177.20
Alert Bay	132,879.52	57,038.94	189,918.46	.....	189,918.46	10,131.25	5,414.09
Athalmer	.....	137,230.26	137,230.26	.....	137,230.26	.....	.....
Barriere	372,219.27	1,143.67	373,362.94	1,391.98	374,754.92	14,057.50	18,007.09
Burns Lake	5,351.84	105,887.50	111,239.34	.....	111,239.34	1,009.16	388.38
Cowichan Lake	.....	8,410.71	8,410.71	.....	8,410.71	349.35	52.40
Dawson Creek	45,118.74	161,641.70	206,760.44	222.47	206,982.91	13,121.26	1,652.82
Golden	136,421.31	1,581.03	138,002.34	.....	138,002.34	7,728.58	6,113.52
Hazelton	.....	47,762.52	47,762.52	.....	47,762.52	21.14	55.00
Hope	118,947.90	*—31,392.07*	87,555.83	.....	87,555.83	5,380.36	5,257.09
Houston	.....	5,000.00	5,000.00	.....	5,000.00	500.00	.....
John Hart	7,200,807.91	6,736,928.55	13,937,736.46	.....	13,937,736.46	73,447.74	195,479.46
Kamloops	331,110.48	23,488.46	354,598.94	3,302.56	357,901.50	*—8,967.18*	18,237.24
Lillooet	25,389.63	16,308.32	41,697.95	.....	41,697.95	5,303.56	794.39
Nakusp	51,482.11	29,988.88	81,470.99	.....	81,470.99	4,707.25	2,512.85
Nanaimo	210,737.05	*—3,399.88*	207,337.17	.....	207,337.17	6,274.20	20,316.57
Peachland-Westbank	99,455.73	44,696.41	144,152.14	.....	144,152.14	77.38	4,466.70
Quesnel	172,132.14	20,697.50	192,829.64	.....	192,829.64	16,513.32	9,675.29
Sechelt	77,020.28	13,274.41	90,294.69	.....	90,294.69	4,428.08	3,974.29
Shuswap	1,049,744.10	459.27	1,050,203.37	.....	1,050,203.37	34,131.68	92,860.98
Smithers	129,953.56	55,082.87	185,036.43	.....	185,036.43	7,241.21	7,096.74
Terrace	73,507.69	28,660.68	102,168.37	183.68	102,352.05	5,917.78	3,981.83
Vanderhoof	134,757.08	2,265.22	137,022.30	.....	137,022.30	12,327.14	6,589.24
Williams Lake	113,638.70	1,380.60	115,019.30	.....	115,019.30	139.56	5,145.31
Totals	$10,634,242.29	$7,446,771.55	$18,081,013.84	$5,734.76	$18,086,748.60	$223,861.94	$418,248.48

Transmission Plant.							
Kamloops-Okanagan	$693,856.93	$727,719.70	$1,421,576.63	$700.23	$1,422,276.86	$63,129.13	$46,207.47
Vancouver Island	4,039,580.98	23,457.64	4,063,038.62	.....	4,063,038.62	41,496.17	124,064.99
Totals	$4,733,437.91	$751,177.34	$5,484,615.25	$700.23	$5,485,315.48	$104,625.30	$170,272.46
Distribution Plant.							
The Albernis	$415,779.91	$83,037.69	$498,817.60	$979.21	$499,796.81	$24,050.93	$21,401.06
Alert Bay	19,217.95	13,284.94	32,502.89	.....	32,502.89	2,198.40	1,242.21
Burns Lake	28,617.04	5,508.63	34,125.67	133.61	34,259.28	1,162.18	495.26
Campbell River	82,490.36	10,939.55	93,429.91	34,164.69	127,594.60	2,494.42	3,098.27
Comox Valley	67,732.30	229,714.42	297,446.72	55,542.60	352,989.32	4,082.20	6,316.93
Cowichan Lake	.....	58,462.60	58,462.60	884.47	59,347.07	468.05	340.90
Dawson Creek	.....	113,469.10	113,469.10	42,247.45	155,716.55	2,781.08	1,652.72
Golden	49,033.79	3,287.96	52,321.75	.....	52,321.75	860.37	2,010.80
Hazelton	.....	47,850.30	47,850.30	3,000.00	50,850.30	510.50	200.00
Hope	72,651.53	37,935.52	110,587.05	.....	110,587.05	3,733.88	3,508.81
Kamloops	376,905.23	236,963.53	613,868.76	2,289.93	616,158.69	19,757.75	15,934.49
Lillooet	7,712.95	32,979.66	40,692.61	.....	40,692.61	*—21.91*	536.04
Nakusp	64,784.92	6,562.90	71,347.82	.....	71,347.82	4,906.19	2,808.26
Nanaimo-Duncan	1,547,112.12	380,145.04	1,927,257.16	14,003.21*	1,941,260.37	19,382.29	88,358.83
North Okanagan	1,061,030.73	363,016.14	1,424,046.87	.....	1,424,046.87	51,802.80	66,047.82
Peachland-Westbank	116,004.59	9,351.37	125,355.96	94.90	125,450.86	5,146.01	4,451.02
Quesnel	87,687.47	38,810.12	126,497.59	.....	126,497.59	4,608.25	3,183.88
Sechelt	150,813.59	48,196.33	199,009.92	.....	199,009.92	*—991.20*	7,288.77
Smithers	105,194.38	32,795.65	137,990.03	.....	137,990.03	4,485.51	4,185.50
Terrace	47,600.06	6,206.37	53,806.43	183.68	53,990.11	3,000.74	1,663.14
Vanderhoof	35,344.34	14,103.00	49,447.34	.....	49,447.34	459.79	1,583.39
Williams Lake	38,508.61	23,157.55	61,666.16	.....	61,666.16	2,398.68	1,841.02
Meters	781,469.18	230,730.60	1,012,199.78	.....	1,012,199.78	50,699.50	21,034.85
Totals	$5,155,691.05	$2,026,508.97	$7,182,200.02	$153,523.75	$7,335,723.77	$207,976.41	$259,183.97
General Plant.							
Service buildings and equipment	$217,486.40	$19,570.78	$237,057.18	.....	$237,057.18	$17,712.97	$10,121.12
Transportation equipment	186,811.07	95,582.87	282,393.94	.....	282,393.94	107,728.30	.....
Tools and equipment	52,312.35	89,112.09	141,424.44	.....	141,424.44	17,585.42	.....
Totals	$456,609.82	$204,265.74	$660,875.56	.....	$660,875.56	$143,026.69	$10,121.12

* *Ladysmith.*

Statement 5—*Continued.*

PLANT AND RELATED RESERVES AS AT MARCH 31ST, 1950—*Continued.*

Undertaking.	Plant Cost.					Maintenance and Renewals Reserve as at Mar. 31, 1950.	Sinking Fund Reserve as at Mar. 31, 1950.
	Plant in Operation.			Plant-acquisition Adjustments, Mar. 31, 1950.	Total Plant Cost, Mar. 31, 1950.		
	Totals as at Mar. 31, 1949.	Additions, Year ended, Mar. 31, 1950.	Totals as at Mar. 31, 1950.				
Unallocated.							
Pending final Court award in respect to expropriated properties	.....	.....	.....	$314,324.64	$314,324.64	.....	.....
Summary.							
Generating plant	$10,634,242.29	$7,446,771.55	$18,081,013.84	$5,734.76	$18,086,748.60	$223,861.94	$418,248.48
Transmission plant	4,733,437.91	751,177.34	5,484,615.25	700.23	5,485,315.48	104,625.30	170,272.46
Distribution plant	5,155,691.05	2,026,508.97	7,182,200.02	153,523.75	7,335,723.77	207,976.41	259,183.97
General plant	456,609.82	204,265.74	660,875.56	.....	660,875.56	143,026.69	10,121.12
Unallocated	.....	.....	.....	314,324.64	314,324.64	.....	.....
Totals	$20,979,981.07	$10,428,723.60	$31,408,704.67	$474,283.38	$31,882,988.05	$679,490.34	$857,826.03

Statement 6.

STATEMENT OF CONSTRUCTION WORK IN PROGRESS AS AT MARCH 31ST, 1950.

Generation Plant.

Bamfield (survey)	$2,075.67
Dawson Creek	9,306.65
Houston	7,271.79
John Hart	86,496.72
Quesnel (survey)—"Central Interior Development Act"	57,863.74
Sechelt	7,946.56
Vanderhoof	703.14
Whatshan	3,282,357.63
Preliminary charges, surveys, and investigations, including sundry maintenance	9,635.26
Diesel engine not yet placed	15,742.93
Total	$3,479,400.09

Transmission Plant.

Kamloops-Okanagan	$31,833.73
Vancouver Island	395,194.85
Vernon-Whatshan	1,071,254.54
Preliminary charges, surveys, and investigations	1,481.41
Total	$1,499,764.53

Distribution Plant.

Albernis	$41,565.50
Alert Bay	8,878.29
Burns Lake	42,006.90
Campbell River	114,695.05
Comox Valley	2,210.88
Dawson Creek	1,336.46
Hope	4,291.76
Houston	23,918.14
Kamloops	167,712.22
Lake Windermere	143,059.65
Nanaimo-Duncan	257,559.48
North Okanagan	22,917.34
Peachland-Westbank	2,883.78
Quesnel	841.08
Smithers	7.97
Sechelt	594.78
Terrace	8,386.71
Preliminary charges, surveys, and investigations, including sundry maintenance	16,969.89
Total	$859,835.88

General Plant.

Administration building	$82,682.21
Tools and equipment	1,950.32
Total	$84,632.53

Statement 6—*Continued.*

STATEMENT OF CONSTRUCTION WORK IN PROGRESS AS AT MARCH 31ST, 1950—*Continued.*

Summary.

Generation plant	$3,479,400.09
Transmission plant	1,499,764.53
Distribution plant	859,835.88
General plant	84,632.53
Total	$5,923,633.03

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1950.

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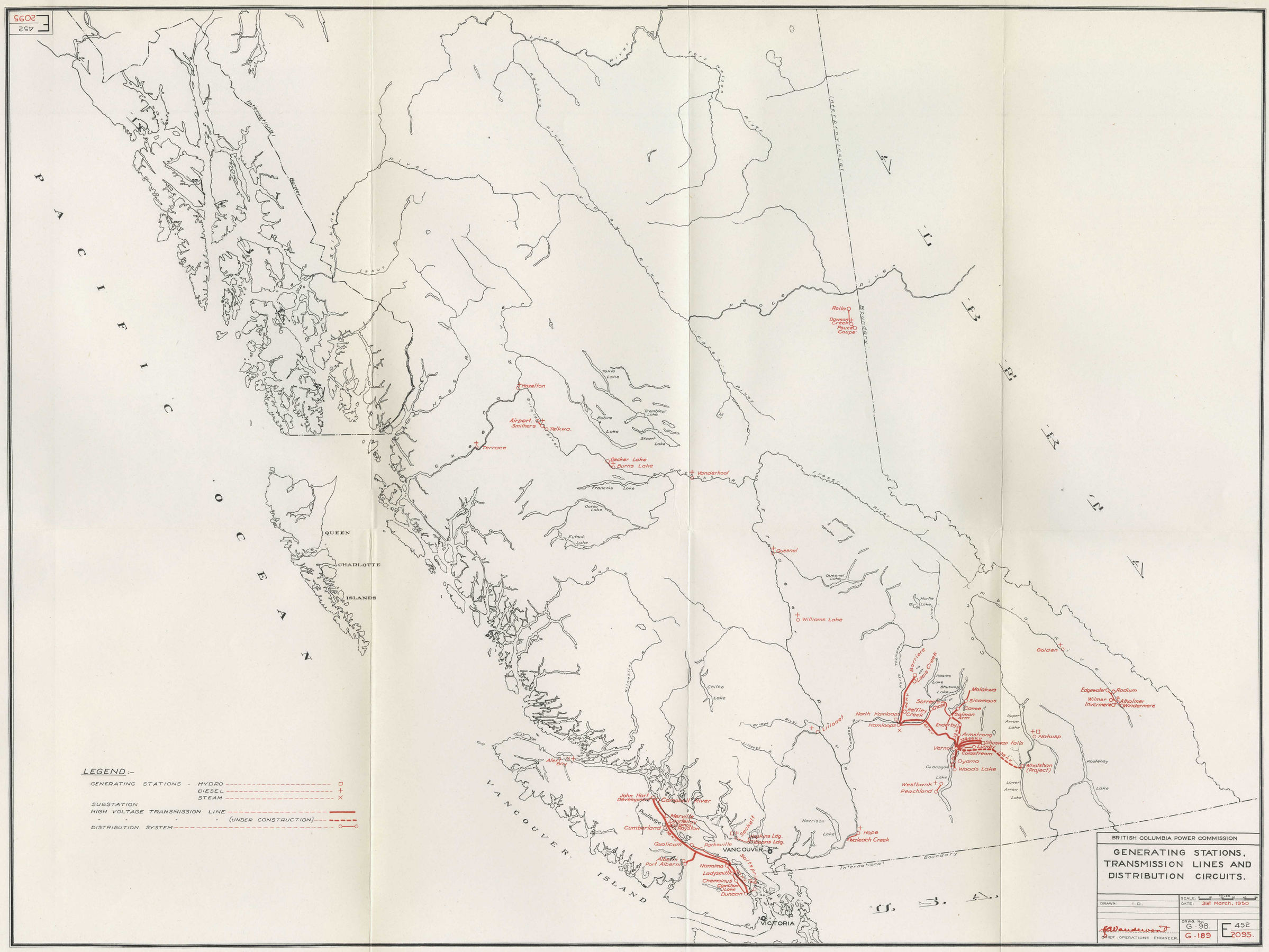

LEGEND :-

GENERATING STATIONS - HYDRO ---------- □
DIESEL ---------- +
STEAM ---------- ×

SUBSTATION
HIGH VOLTAGE TRANSMISSION LINE ----------
" " " " (UNDER CONSTRUCTION) ----------
DISTRIBUTION SYSTEM ----------

BRITISH COLUMBIA POWER COMMISSION

GENERATING STATIONS, TRANSMISSION LINES AND DISTRIBUTION CIRCUITS.

DRAWN: I. D.
SCALE: MILES
DATE: 31st March, 1950
DRWG. No. G-98. G-189
E 452 2095.
CHIEF OPERATIONS ENGINEER.

E 452 2095