PROVINCE OF BRITISH COLUMBIA

FOURTH ANNUAL REPORT

OF THE

BRITISH COLUMBIA POWER COMMISSION

FOR THE YEAR ENDED MARCH 31ST

1949

VICTORIA, B.C.:
Printed by DON MCDIARMID, Printer to the King's Most Excellent Majesty.
1949.

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, 1949.

BYRON I. JOHNSON,
Premier.

Victoria, B.C.,
June 30th, 1949.

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 1948–49, is respectfully submitted herewith in accordance with section 93 of the "Electric Power Act."

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

W. W. FOSTER,
Commissioner.

F. L. SHAW,
Commissioner.

S. R. WESTON,
Chairman.

Victoria, B.C.,
June 30th, 1949.

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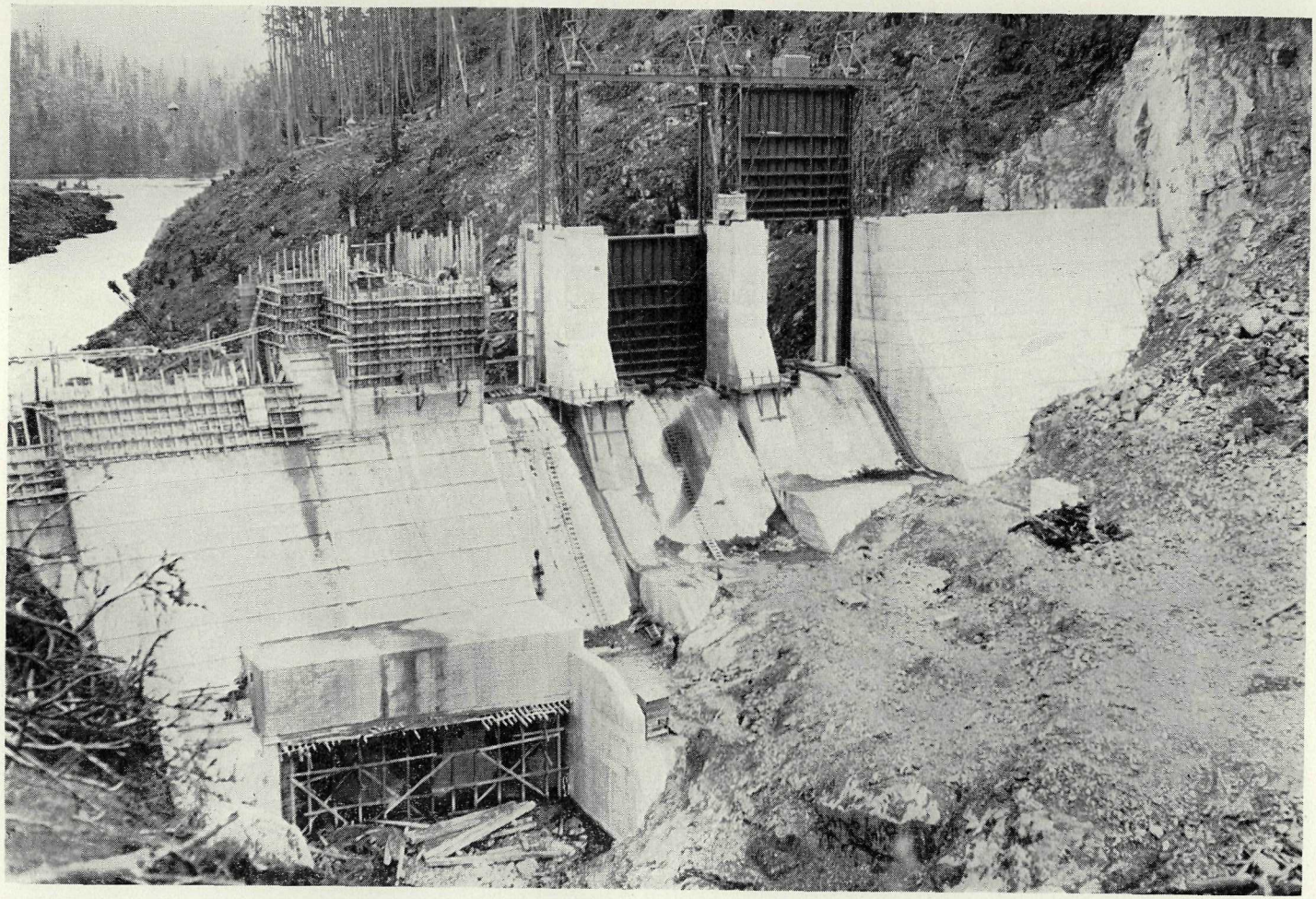


JOHN HART DEVELOPMENT.

The down-stream face of the Ladore Falls dam. The channel above the dam will be flooded for storage purposes.

JOHN HART DEVELOPMENT.

The wood-stave pipe-lines, illustrating method of construction for No. 2 line.

Fourth Annual Report of the British Columbia Power Commission, Fiscal Year ended March 31st, 1949.

I. GENERAL REVIEW.

The British Columbia Power Commission, appointed April 17th, 1945, commenced actual operations August 1st, 1945, with the acquisition of five electrical properties having a total of 11,906 customers. During the succeeding 3½-year period to March 31st, 1949, the Commission acquired by purchase or expropriation an additional sixteen electrical properties serving a further 10,346 customers at the respective dates of acquisition. A total of 22,252 previously existing services have thus been brought under the Commission.

Since August, 1945, when operations commenced, 9,367 new services have been installed, so that the total number of customers is now 31,619. This represents an increase during the year of 4,149 customers from the total of 27,470 reported at March 31st, 1948. Of this increase, 831 connected services were acquired with the distribution plant of the Vancouver Island Utilities, Limited, the balance of 3,318 being the number of new services installed during the year.

This growth has been accompanied by a corresponding increase in generating plant. 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 three years the generating capacity was increased by 59,228 kva, reaching 69,583 kva by March 31st, 1949. This heavy construction programme has, of course, made the Commission more self-sufficient in meeting power requirements; hence the amount purchased has decreased substantially.

There are now nineteen power districts through which power is distributed to the present 31,619 customers. The distribution facilities in Courtenay and the Comox district, at present owned by the City of Courtenay, will come under Commission operation April 1st. Negotiations are also in progress with a view to establishing power districts in Dawson Creek-Pouce Coupe, Hazelton, the Lake Windermere area, and other parts of the Province.

Comparative figures for the years ended March 31st, 1948 and 1949, 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."

	Year ended March 31st, 1948.	Year ended March 31st, 1949.
Number of generating units in operation	51	58
Generating capacity ..... kva	68,060	69,583
Transmission-line (over 23 kv) ..... miles	285	285
Primary distribution circuits ..... miles	1,131	1,389
Number of power districts in operation	18	19
Kwh generated or purchased	82,533,340	132,685,512
Number of customers—		
Residential	22,434	25,991
Commercial	4,188	4,911
Power	818	677
Street-lighting	30	40
Total number of customers	27,470	31,619

	Year ended March 31st, 1948.	Year ended March 31st, 1949.
Average monthly consumption, residential customers ..... kwh	84	96
Average cost per kwh paid by residential customers	4.5c.	4.0c.
Average monthly consumption, commercial customers ..... kwh	308	382
Average cost per kwh paid by commercial customers	4.5c.	3.7c.
Average monthly consumption, power customers ..... kwh	2,734	3,294
Average cost per kwh paid by power customers	1.7c.	1.7c.
Revenue—		
Power districts—		
Electrical-energy sales	$2,122,781.04	$2,404,671.87
Miscellaneous	23,908.35	26,636.59
	$2,146,689.39	$2,431,308.46
Special-contract sales	.....	118,954.82
	$2,146,689.39	$2,550,263.28
Operating expenses—		
Labour	$311,646.50	$416,672.97
Fuel	165,705.50	216,549.44
Other direct operating expenses	108,246.41	110,351.41
Customer accounting and collecting	113,671.05	157,311.86
3-per-cent. gross revenue assessment	62,576.80	71,044.90
Administration and general expense	117,856.33	155,928.48
Purchased power	293,737.00	35,427.03
	$1,173,439.59	$1,163,286.09
Interest on capital in operation	224,221.13	517,720.32
Direct expenses	$1,397,660.72	$1,681,006.41
Operating surplus (excluding provision for reserves)	$749,028.67	$869,256.87
Provision for reserves—		
Maintenance and renewals	$265,873.99	$418,323.58
Sinking fund	112,115.08	258,860.74
Contingencies	140,545.54	154,769.86
	$518,534.61	$831,954.18
Net operating surplus (transferred to Stabilization Reserve)	$230,494.06	$37,302.69

The average cost per kwh showed a further reduction during the year which, accompanied by an increased consumption per customer indicates that a greater use of power—one of the main objectives of the Commission—is being encouraged. The table " Statistics relating to the Supply of Electrical Energy " sets out the very considerable progress made in these two factors for each individual power district. In several instances the consumption per customer has doubled, while the average revenue per kwh has decreased by as much as 50 per cent., all in a three-year period, significant for generally rising prices. Rate revisions are now in effect in thirteen of the nineteen power districts. As the volume of service continues to improve, further reductions in unit costs will result.

Although labour and most materials are in more active supply, costs are still high, so that the increased volume of business has not reflected a large net operating surplus. The net surplus was further lessened owing to highly promotional rate schedules being adopted in the important Vancouver Island centres of Nanaimo, the Albernis, and Duncan during the year. This resulted in considerably lower revenues per customer from these areas, since the revised rates grant substantial reductions to all customers who make intensive use of their maximum requirements. These revenues will gradually increase through heavier consumption.

Good progress was made on the Ladore Falls storage-dam, as well as on the installation of the third and fourth 25,000-kva units at the John Hart power plant. This work should be completed in 1949.

Work on the Whatshan Development near Needles, Lower Arrow Lake, continued throughout the year. All designing and construction-work for this project have been under the direction of the Commission's own staff. The plans call for a generating-station of initially two, ultimately four, 12,500-kva units to supply the Arrow Lake, North Okanagan, and Kamloops areas. To this end, rights-of-way have been acquired and transmission-lines are being constructed from the power-site to Vernon and Kamloops.

Further improvement in the administrative organization took place during the year. The engineering and purchasing functions have been centralized. The character of all major departments is now sufficiently well defined to indicate permanent requirements, and preliminary plans for an administration building in Victoria are under way.

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

Power District.	Fiscal Year ended Mar. 31.	Residential Service.						Commercial Service.						Power Service.				Street-Lighting Service.			Totals.			
		Revenue.	Consumption.	Number of Customers.	Av. Monthly Consumption.	Av. Monthly Bill.	Revenue per Kwh.	Revenue.	Consumption.	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.		Kwh.	$	c.	$	Kwh.		Kwh.	$	c.	$	Kwh.		c.	$	Kwh.		$	Kwh.		c.
The Albernis	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Jan. 1, 1947.)	2,877	.....
	1947	29,556.13	662,644	2,474	90	4.00	4.5	18,405.25	530,739	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
	1948	122,940.07	2,907,171	2,938	90	3.80	4.2	77,132.03	2,010,020	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
	1949	136,368.13	3,765,710	3,208	102	3.70	3.6	81,429.61	2,901,691	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
Alert Bay	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Aug. 1, 1945.)	152	.....
	1947	5,858.78	53,000	110	43	4.70	11.0	9,219.72	119,000	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
	1948	6,848.87	96,520	132	68	4.85	7.1	10,076.96	199,110	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
	1949	8,896.85	194,099	169	108	4.95	4.6	10,817.20	356,670	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
Burns Lake	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Nov 1, 1947.)	88	.....
	1948	2,567.51	14,650	66	48	8.35	17.5	2,488.95	17,195	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
	1949	5,917.23	32,646	109	34	6.15	18.1	7,293.14	49,924	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
Campbell River	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Jan 1, 1949.)	831	.....
	1949	6,543.76	91,199	713	64	4.60	7.2	4,812.59	75,319	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
Cumberland-Royston	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Royston,	Jan. 1, 1947;	Cumberland,	June 5, 1947.)	870	.....
	1947	1,255.30	21,247	93	76	4.50	5.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	1,255.30	21,247	93	5.9
	1948	28,846.60	381,012	837	45	3.40	7.6	9,409.21	221,106	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
	1949	37,677.14	521,950	860	51	3.70	7.2	11,632.05	270,818	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
Golden	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Sept. 1, 1945.)	158	.....
	1947	6,275.26	44,200	124	31	4.35	14.2	7,513.21	74,000	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
	1948	6,855.41	53,994	141	34	4.30	12.7	8,488.36	98,407	54	162	14.00	8.6	745.06	5,914	6	12.6	500.45	.....	....	16,589.28	158,315	201	10.5
	1949	6,846.84	102,008	158	57	3.80	6.7	8,098.93	210,186	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
Hope	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Aug. 1, 1945.)	190	.....
	1947	11,103.42	107,300	269	37	3.80	10.3	10,076.62	141,300	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
	1948	11,470.01	184,792	342	51	3.20	6.2	12,647.95	291,137	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
	1949	16,558.16	349,212	398	78	3.70	4.7	15,721.28	497,161	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
Kamloops	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Jan 1, 1947.)	2,954	.....
	1947	29,586.47	835,165	2,354	118	4.25	3.6	34,612.54	656,614	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
	1948	113,315.36	3,176,827	2,588	107	3.80	3.6	136,481.20	2,647,482	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
	1949	124,136.04	3,717,417	2,778	116	3.85	3.3	157,761.03	3,034,725	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
Lillooet	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Aug. 1, 1947.)	135	.....
	1948	3,643.72	46,091	82	68	5.35	7.9	3,872.34	109,177	45	316	11.20	3.5	781.38	13,545	14	5.8	.....	.....	....	8,297.44	168,813	141	4.9
	1949	5,782.38	83,536	81	83	5.75	6.9	6,714.59	192,801	40	358	12.45	3.5	1,696.03	33,621	14	5.0	.....	.....	....	14,193.00	309,958	135	4.6
Nakusp	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition:	Sept. 1, 1945.)	250	.....
	1947	7,952.72	75,000	217	30	3.20	10.6	3,804.34	48,400	52	76	6.00	7.9	529.68	7,500	12	7.1	.....	.....	....	12,286.74	130,900	281	9.4
	1948	9,347.76	99,211	230	37	3.45	9.4	5,317.30	79,093	65	114	7.70	6.7	383.11	2,440	5	15.7	.....	.....	....	15,048.17	180,744	300	8.4
	1949	11,278.30	203,261	272	66	3.65	5.5	5,399.76	129,445	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

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.

Power District.	Fiscal Year ended Mar. 31.	Residential Service.						Commercial Service.						Power Service.				Street-Lighting Service.			Totals.			
		Revenue.	Consumption.	Number of Customers.	Av. Monthly Consumption.	Av. Monthly Bill.	Revenue per Kwh.	Revenue.	Consumption.	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.		Kwh.	$	c.	$	Kwh.		Kwh.	$	c.	$	Kwh.		c.	$	Kwh.		$	Kwh.		c.
Nanaimo-Duncan	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	(Date of acqu		isition: Nanaimo-Duncan, etc., Aug. 1, 1945;				Parksville-Qualicum, Jan. 1, 1947;			Chemainus, Mar. 15, 1947.)		7,737	.....
	1947	299,777.93	5,933,381	7,477	72	3.65	5.1	140,757.69	3,506,220	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
	1948	378,033.10	7,839,393	8,278	83	4.00	4.8	188,970.81	4,394,887	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
	1949	377,682.07	9,802,055	9,102	94	3.60	3.8	230,543.15	7,473,774	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
North Okanagan	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition, Aug. 1, 1945.)		4,477	.....
	1947	173,236.77	4,169,895	4,167	87	3.60	4.2	112,465.09	2,715,790	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
	1948	203,025.85	5,242,519	4,791	97	3.75	3.9	133,269.83	3,107,124	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
	1949	256,731.80	7,034,583	5,660	111	4.05	3.6	158,666.22	3,772,011	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
Peachland-Westbank	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition: Aug. 7, 1946.)		288	.....
	1947	5,984.54	68,059	244	36	3.15	8.8	3,212.77	41,002	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
	1948	11,098.89	180,318	312	53	3.25	6.2	5,943.78	116,398	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
	1949	15,424.04	331,954	360	80	3.75	4.6	7,444.17	172,653	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
Quesnel	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition: Aug. 1, 1945.)		289	.....
	1947	9,856.63	127,000	252	45	3.50	7.7	13,962.69	171,200	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
	1948	11,726.60	172,363	312	51	3.50	6.8	15,086.51	316,178	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
	1949	15,435.00	273,872	403	66	3.70	5.6	17,464.16	458,739	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
Sechelt	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition: Sept. 1, 1945.)		337	.....
	1947	15,609.09	139,159	423	30	3.40	11.2	5,747.09	70,300	74	91	7.40	8.2	2,228.27	83,400	4	2.7	.....	.....	....	23,584.45	292,859	501	8.1
	1948	20,850.30	255,328	628	40	3.25	8.2	7,488.11	139,777	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
	1949	30,391.53	446,248	763	52	3.55	6.8	10,946.95	315,380	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
Smithers	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition: Sept. 1, 1945.)		293	.....
	1947	10,920.33	102,000	245	36	3.85	10.7	9,737.67	75,000	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
	1948	10,577.48	158,769	308	49	3.30	6.7	10,867.63	247,854	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
	1949	15,814.70	333,809	369	83	3.90	4.7	14,248.84	445,398	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
Terrace	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition: Sept. 20, 1945.)		59	.....
	1947	2,850.84	17,100	62	26	4.30	16.7	3,692.31	33,100	35	80	8.95	11.1	.....	.....	.....	.....	93.00	9,000	1	6,636.15	59,200	98	11.2
	1948	4,736.81	52,155	186	38	3.50	9.1	5,984.98	93,072	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
	1949	9,853.09	136,816	261	50	3.55	7.2	6,649.24	133,184	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
Vanderhoof	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition: Sept. 1, 1945.)		106	.....
	1947	4,462.45	43,800	78	49	5.00	10.2	7,917.34	70,000	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
	1948	4,424.41	64,373	106	60	4.15	6.9	6,138.75	101,171	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
	1949	5,858.85	114,864	125	84	4.25	5.1	6,608.10	177,005	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
Williams Lake	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(Date of	acquisition: Sept. 1, 1945.)		161	.....
	1947	7,324.45	85,300	116	66	5.70	8.6	11,386.30	150,600	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
	1948	7,184.58	126,285	157	76	4.30	5.7	13,546.73	292,938	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
	1949	9,625.70	197,675	202	90	4.35	4.9	16,069.72	432,245	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
Totals	.....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	(At resp	ective dates of acquisition.)		22,252	.....
	1947	621,611.11	12,484,250	18,705	74	3.70	5.0	392,510.63	8,403,265	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
	1948	957,493.33	21,051,771	22,434	84	3.80	4.5	653,211.43	14,482,126	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
	1949	1,096,821.61	27,732,914	25,991	96	3.80	4.0	778,320.73	21,099,129	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

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.

II. LEGAL.

1. LEGISLATION.

The "Electric Power Act" was amended at the last session of the Legislature as follows:—

(*a*) The borrowing limitation under the Act was raised from $30,000,000 to $45,000,000.

(*b*) The provisions permitting the Commission to borrow moneys directly were amended.

(*c*) The Commission was given authority to expend money for disseminating information concerning its operations.

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

The appeals of the Commission and the companies in the above were heard by the Honourable Mr. Justice Wilson, pursuant to the "Electric Power Act," the "Nanaimo-Duncan Utilities Compensation Act," and the "West Canadian Hydro Electric Corporation Limited and Columbia Power Company Limited Compensation Act."

The appeal in respect to Nanaimo-Duncan Utilities began on August 16th, 1948, and the evidence was heard from August 16th to September 16th, and again in conclusion on October 1st. The appeal in respect to Columbia Power began on September 29th, and the evidence was heard until October 26th. The appeal in respect to West Canadian began on December 1st and, following an adjournment from December 22nd to March 1st, the evidence was completed on March 24th.

The argument on all three appeals will begin on April 25th, 1949.

3. ACQUISITION OF ELECTRICAL PROPERTIES.

The Commission acquired on January 1st, 1949, by expropriation, the electrical distribution system of Vancouver Island Utilities, Limited, serving the Village of Campbell River and adjoining areas. The company supplied 831 customers with 25-cycle power purchased from the Canadian Collieries (Dunsmuir), Limited, plant on Puntledge River. Following expropriation, the compensation was mutually agreed upon.

4. RIGHTS-OF-WAY AND SITES.

The 60-kv transmission-line from Vernon to Kamloops required the acquisition of a right-of-way 90 feet in width over a distance of 69.5 miles. The line crossed 224 parcels of land registered in the names of 114 owners. The acquisition of this right-of-way was commenced last September, and to date easements over 163 parcels have been completed with 103 owners, and negotiations with the remaining 11 owners are in various stages of completion.

In the course of the year 24 of the 52 outstanding right-of-way claims on the 138-kv line from the John Hart plant to Nanaimo and Port Alberni were completed, and negotiations with the remaining 28 owners are proceeding toward completion. The right-of-way in connection with this line crossed 414 parcels of land registered in the names of 115 owners, and to date a total of 87 owners have been settled, involving 238 parcels of land.

An easement was obtained from the Comox Logging & Railway Company covering a portion of the distribution system of the Vancouver Island Utilities, Limited, which was expropriated by the Commission on the 1st day of January, 1949.

Surveys of land easements required for the 132-kv transmission-line from the Whatshan Development to Vernon are nearing completion, and the preliminary work of contacting the private-property owners was commenced on February 1st, 1949.

Surveys and appraisals of seven parcels of privately owned lands containing some 200 acres, which lie within the area to be flooded when the level of Whatshan Lake is raised, were completed. The purchase of four of these parcels containing 76.76 acres, together with the summer homes located on three of them, have been finalized. Negotiations for the purchase of the remaining acreage and summer homes are in various stages of completion. The 1,515.18 acres of vacant Crown lands which also lie within the area to be flooded were obtained under a licence of occupation from the Water Rights Branch. A further licence of occupation was obtained from the Water Rights Branch in this connection covering the occupation of 24.14 acres of vacant Crown lands required for pipe-line and tunnel right-of-way.

An application was made to the Provincial Department of Lands and Forests for a reserve on certain portions of foreshore on Lower Arrow Lake, together with an application to purchase 112.79 acres of upland property for the purpose of constructing thereon a ramp and other installations required for the Whatshan Development.

An agreement was entered into with the Crown in the right of the Province for the use of a certain portion of the Cottle Hill radio range site required for radio communication covering the Commission's Vancouver Island transmission systems.

Substation-sites were acquired at the following places:—

Alberni, by purchase from Alberni Pacific Lumber Company, Limited.

Port Alberni, by purchase from Bloedel, Stewart & Welch, Limited.

Duncan, by purchase from British Columbia Electric Railway Company, Limited.

Vernon, by purchase from Fred Hoffman.

Surveys were completed for both the Saltspring Island submarine cable crossing of Stewart Channel and the overhead cable crossing of the Somass River. 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.

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 various power districts and for the supply of street-lighting service in certain incorporated villages and communities.

6. WATER LICENCES.

Licences have been obtained under the "Water Act" for storage and diversion of water at Whatshan Lake and Barnes Creek covering the project now under way in this area.

A licence has been obtained under the "Water Act" covering the diversion of water from Sproat Lake for domestic use in the Port Alberni substation.

Water licences held by the Commission on Baker Creek, Quesnel district, for storage and diversion purposes were cancelled at the Commission's request, as of March 3rd, 1949.

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.

There were no major claims under any of the coverages during the course of the year's operations, with the exception of a fire claim for the approximate sum of $10,000 covering the loss of one 50-horsepower diesel generating unit, which claim is now being adjusted. However, a number of small claims, under fleet coverage, public liability and property damages coverages, were reported and satisfactorily settled.

III. CONSTRUCTION.

1. PRODUCTION PLANT.

BURNS LAKE.

A third 31-kva portable diesel-electric generating set was added in July, 1948, making the total plant capacity 93.5 kva.

CAMPBELL RIVER—JOHN HART DEVELOPMENT.

Continued progress was made throughout the year on the John Hart hydro-electric development. The second 25,000-kva unit was placed in operation on April 5th, 1948. By the end of the year the power-house, except for some interior finishing, had been completed for four generating units, each of 25,000-kva capacity. Construction of the second 12-foot diameter steel and wood-stave pipe-line is nearing completion, and it is anticipated that the third generating unit will be placed in operation early in June, 1949, to be followed within two months by the fourth unit.

Work on the storage-dam at Ladore Falls, below the outlet of Lower Campbell Lake, was suspended temporarily early in 1949 due to the exceptionally cold winter. However, since the end of February good progress has been made. The diversion-tunnel will be closed during the early summer of 1949, and sufficient water will be impounded in Lower Campbell Lake to ensure meeting all demands on the generating plant during the coming year.

Work on the diversion of the existing road on the south side of Lower Campbell Lake was completed in October, 1948, following which the diverted road was taken over by the Department of Public Works and gazetted as a public highway. Considerable progress was also made on the construction of 5½ miles of secondary road on the north shore of the lake to replace the existing road to Brewster Lake area, portions of which will be flooded.

A plan was developed, and will be put into operation in 1949, for clearing the shores of Lower Campbell Lake and removing floating trash as the water is gradually raised to meet the demands for storage.

HOPE.

The diesel power-house was extended and two 312-kva-capacity diesel-electric generating units installed, one of which was put into immediate operation. A 62.5-kva portable diesel unit was removed, leaving a total capacity of 999 kva.

KAMLOOPS.

The steam-electric generating-plant capacity was increased by the addition of a 625-kva unit transferred from Nanaimo where it was no longer required, owing to the availability of power from the John Hart plant.

LILLOOET.

The diesel installation was increased by the addition of a 62.5-kva portable unit released from Hope, which makes the total installed diesel-electric capacity of the plant 250 kva.

NAKUSP.

The dam and most of the pipe-line of the hydro-electric generating plant was rebuilt, and the 125-kva existing generating unit was replaced with a 250-kva unit released from Nanaimo No. 2 plant. The reconstructed pipe-line also was taken from the same plant.

SECHELT.

A 125-kva diesel-electric generating unit was transferred to Sechelt plant from Qualicum plant, which is now inactive, since power is delivered to the Parksville-Qualicum area from the John Hart plant. The total installed capacity at Sechelt is now 700 kva.

SHUSWAP FALLS—SUGAR LAKE STORAGE-DAM.

The apron at the toe of Sugar Lake storage-dam, which had been considerably eroded due to discharge of flood-water, was repaired with concrete and placed in good condition prior to the exceptionally heavy spring flood of May, 1948.

TERRACE.

The capacity of Terrace diesel-electric generating plant was increased to 437.5 kva by the addition of a third unit rated at 187 kva.

WESTBANK.

The capacity of Westbank diesel-electric generating-station was increased to 664.5 kva by the addition of a 125-kva and a 62.5-kva unit transferred from Williams Lake.

WHATSHAN.

A contract for construction of the 12,500-foot long by 12-foot diameter tunnel and for excavation and other works relating thereto was entered into on April 21st, 1948. After some delay in starting work due to the unusually high 1948 spring flood, good progress on this work was maintained so that by the end of the year 4,519 feet of tunnel had been driven. Rock excavation for the power-house was 90 per cent. complete, and excavation behind a cofferdam at the Whatshan Lake end of the tunnel was also completed so as to permit work on that portion of the tunnel during the summer of 1949.

A staff house and four operators' dwellings situated near the power-house were constructed and will be used prior to completion of the plant to house construction crews.

The road to the power-house was widened and improved, and a new road approximately 1½ miles long constructed to the tunnel intake.

Orders have been placed for two 12,500-kva generating units, turbines, valves and other equipment, manufacture of which is proceeding according to schedule.

WILLIAMS LAKE.

A new 250-kva Vivian 8-cylinder diesel was installed in December, 1948. Two smaller diesels were transferred to Westbank during the year. The total installed capacity is now 781.5 kva.

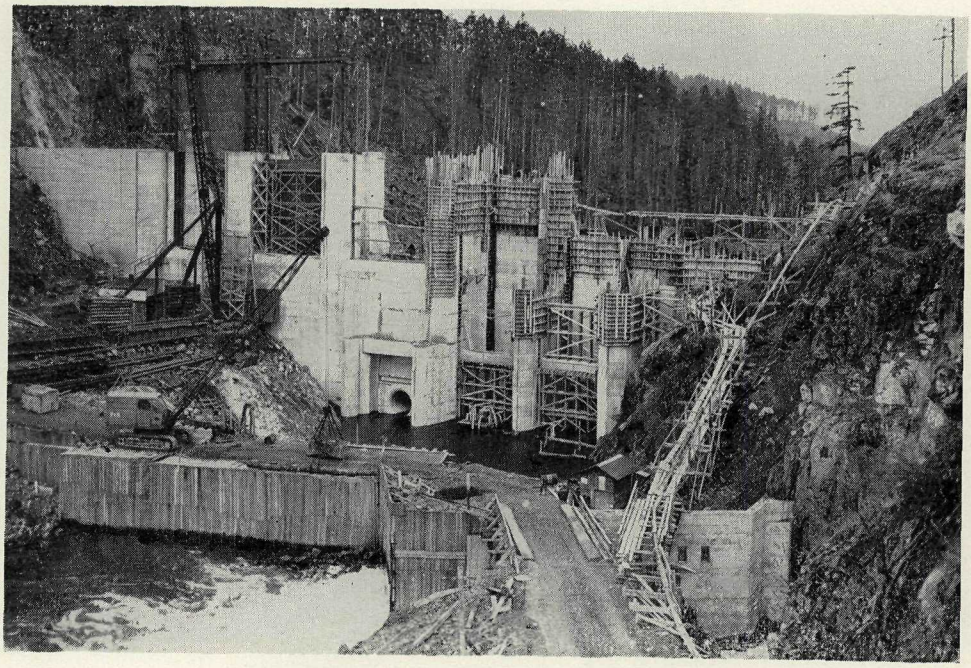
The following is a summary of the additions to the generating plants during the year:—

Station.	Generation Capacity. Kva.	Type of Prime Mover.
Burns Lake	(1) 31.0	Diesel
Hope	(1) 312.0	Diesel
Kamloops	(1) 625.0	Steam Turbine*
Lillooet	(1) 62.5	Diesel
Nakusp	(1) 250.0†	Hydro-electric*
Sechelt	(1) 125.0	Diesel
Terrace	(1) 187.0	Diesel
Westbank	(1) 125.0	Diesel
	(1) 62.5	Diesel
Williams Lake	(1) 250.0	Diesel

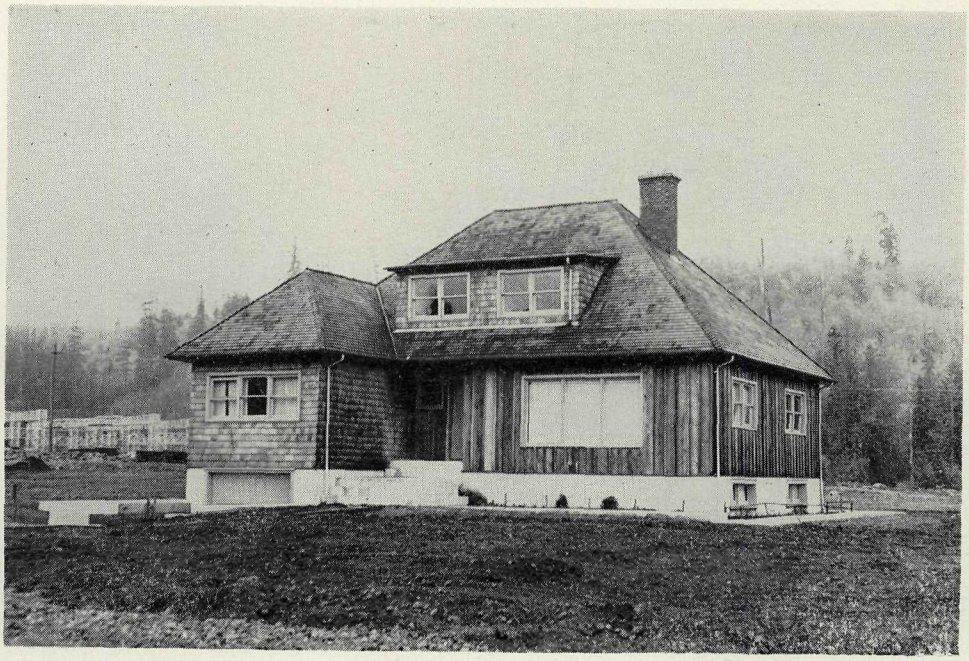
* Formerly in operation in Nanaimo.

† Replaces one 125-kva hydro-electric set.

JOHN HART DEVELOPMENT.

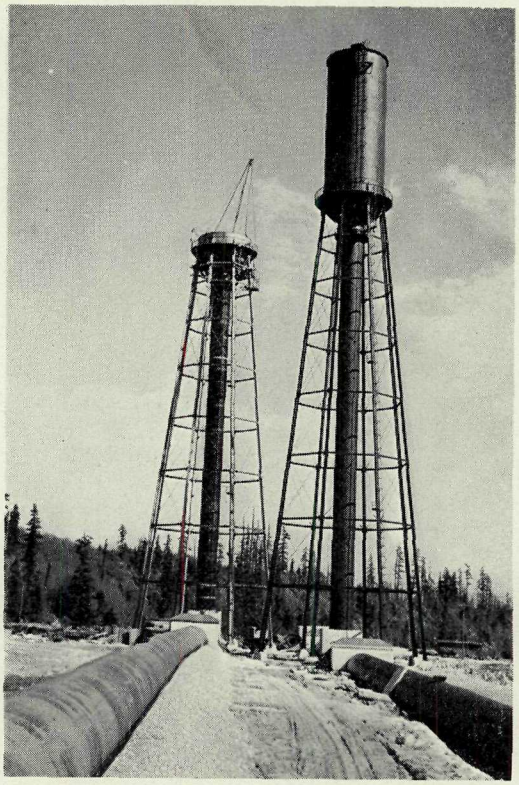


The up-stream face of Ladore Falls dam.

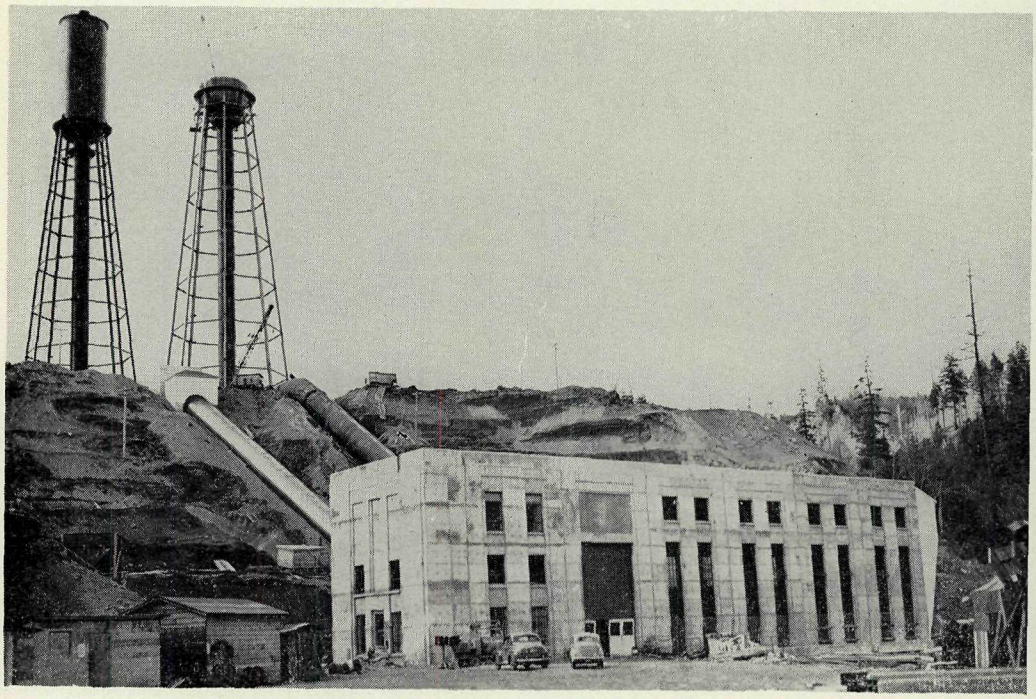


A typical operator's dwelling on townsite.

JOHN HART DEVELOPMENT.



Close-up of Surge-tank No. 2. Bowl and bottom ring installed.



Power-house and surge-tanks from switching-station.

2. TRANSMISSION PLANT.

VANCOUVER ISLAND SYSTEM.

Nanaimo (T.S. 3) and Alberni (T.S. 2) substations, which were sufficiently advanced to be placed in operation last year, were completed early in the current fiscal year, and, following adjustments to the control and protective relay system, were transferred to the operating division of the Commission.

Due to the load-growth in Nanaimo and vicinity, particularly arising from the construction of Nanaimo Sulphate, Limited, pulp-mill, it became evident that by 1950 the 15,000 kva of installed capacity would become inadequate. Accordingly, plans were prepared for duplicating the Nanaimo installation. Orders were also placed during September for three 4,000-kva 60/13.8-kv transformers, to be installed at the pulp-mill. Ten miles of 60-kv line of wood-pole construction will connect the mill to the substation, and orders were placed for materials required for this transmission-line.

The capacity of Nanaimo Pine Street substation was increased by replacing three 1,000-kva 60/23-kv transformers with three 2,500-kva transformers.

In order to meet plans for the future supply of 60-cycle power to the Courtenay and Cumberland areas, three 5,000-kva 138/13.8-kv transformers were placed on order.

VERNON-KAMLOOPS.

Construction of the 63-kv Vernon–Kamloops transmission-line was commenced in June, and by the end of the fiscal year the line was 95 per cent. complete. This transmission-line has a length of 69.5 miles. In addition to providing for interchange of power between Vernon and Kamloops, the line will deliver power to a distribution system to be constructed in the Falkland-Westwold-Monte Lake area.

This transmission-line, linked with the existing 63-kv line from Shuswap Falls near Vernon, terminates at Kamloops in a 6,000-kva 63/12-kv substation with 12-kv distribution feeders. Construction and installation of the terminal facilities at both ends was well advanced at the end of the year.

WHATSHAN-VERNON.

Clearing operations were commenced at both ends of the right-of-way for the 138-kv Whatshan–Vernon transmission-line.

This line is designed as a single circuit of A.C.S.R. conductor to be supported on twin-pole structures.

At the Whatshan end a galvanized-steel switching structure will be constructed. Two 12,500-kva 3-phase 6.9/138-kv water-cooled transformers will be installed at this end of the line. Grading of this switchyard was partially completed during the year. At the Vernon end, three 8,333-kva 138/63-kv transformers, with a spare unit, will be installed. The switching structures will be of creosoted timber, such construction being considered preferable to steel, so that any future extensions and changes which might ultimately be required at this central point on the system could more easily be made.

3. DISTRIBUTION PLANT.

The expansion of distribution facilities by means of extensions and by the reconstruction of overloaded lines was continued on a vigorous scale. The distribution system at Quesnel, acquired by the Commission in 1945, was rebuilt.

Street-lighting additions and improvements were made at Alberni, Hope, Lumby, Lillooet, Nanaimo, North Kamloops, Peachland, Quesnel, Smithers, and Telkwa.

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

THE ALBERNIS.

The system expansion included the placing of 328 poles, which added 7.16 miles of primary circuit and 4.52 miles of secondary circuit, and 326 consumers to the district. Distribution-transformer capacity was increased by 1,021 kva.

ALERT BAY.

The distribution and street-lighting systems, acquired in 1945, were completely rebuilt with larger distribution transformers and heavier conductors. Forty-seven customers were added.

BURNS LAKE.

The system was rebuilt and extended, adding fifty-five customers.

CAMPBELL RIVER.

This system, acquired on January 1st, 1949, is undergoing alterations to substitute 60-cycle service for the existing 25-cycle supply. Six customers were connected.

CUMBERLAND-ROYSTON.

Fifty-three new poles were set, adding 2.1 miles of 2.3-kv line. An additional 6.1 miles of line was rebuilt to increase capacity. Twenty-four customers were added.

GOLDEN.

A new street-lighting system consisting of forty-nine modern units was installed. A half-mile of 2.3-kv line and seventeen customers were added to the district.

HOPE.

Forty-four new poles were set, which added 1.45 miles of 2.3-kv primary and 0.2 mile of secondary line. A 300-kva transformer substation was constructed to serve a sawmill load, and sixty-five customers were connected.

Work was commenced on the construction of a distribution-line from Hope to serve the Flood-Laidlaw area. Subsequent arrangements made for purchasing power from the British Columbia Electric Railway Company at Jones Creek necessitated a redesign of this line to permit transmitting the power to Hope. This involved heavier conductors and higher-voltage service transformers. The new line is scheduled for completion in August.

KAMLOOPS.

Two hundred and ninety-nine new poles were set, adding 3.8 miles of 11.5-kv line, 4.1 miles of 2.3-kv line, and 3.5 miles of secondary line to the district. Two hundred and forty-eight customers were connected. Preliminary locations were staked and some pole distribution commenced on the construction of an 11.5-kv feeder from Kamloops to Chase.

LILLOOET.

One mile of 2.3-kv line was added.

NAKUSP.

Thirty-five poles were set, adding 1.3 miles of 2.3-kv primary line and 0.6 mile of secondary line to the district. Forty-six customers were connected.

NANAIMO-DUNCAN.

Approximately 550 new poles were set, adding 40.1 miles of distribution-line at various voltages to the system.

The customers added—947—represent about 10 per cent. of the total at April 1st, 1948.

Work was started on the electrification of the rural areas at Coombs, Errington, and Hilliers, and customer surveys were made in the Cedar and Bowser areas.

The erection of the new 2/0 copper 23.0-kv ring main around Nanaimo was nearly completed, and resulted in a material improvement in voltage conditions.

The 23.0-kv line north of Nanaimo was extended from Craig's Crossing to Qualicum, and construction of lines to supply the Nanaimo sulphate pulp-mill at Cedar was well advanced.

Preparations were made to extend the 23-kv line to Saltspring Island, and considerable distribution-transformer capacity was added to the district.

NORTH OKANAGAN.

Substantial progress was made in extending distribution-lines in the rural areas of the North Okanagan Valley. A total of 104.4 miles of new primary distribution circuits was built, and existing systems were extended by adding 1.3 miles of primary line and 1.9 miles of secondary line.

Sixteen miles of distribution-line were converted from 2.3 to 6.9/12 kv.

In many cases, conductor and transformer sizes were increased to meet heavier demands—notably in the City of Vernon.

A total of 1,029 services were connected, for a net gain of 961 customers for the year, representing an increase of over 16 per cent. since April 1st, 1948.

PEACHLAND-WESTBANK.

The primary distribution was increased by 2.5 miles, using eighty-one new poles. Fifty-eight customers were added.

QUESNEL.

The entire distribution system, acquired in 1945, was rebuilt and a new street-lighting system was constructed. One hundred and nine customers were connected.

SECHELT.

The distribution system was expanded by the addition of 7.47 miles of 6.9-kv and 6.25 miles of secondary distribution-line.

In addition to this work, 2.61 miles of 2.3-kv line was converted to 6.9-kv distribution, which nearly completes the programme of converting this district to the higher voltage.

There was a net increase of 163 customers to the district during the year.

SMITHERS.

The 6.9/12-kv distribution system was extended by the addition of 7.8 miles of line, and 5.5 miles were added to the 2.3-kv system by the acquisition of the line formerly operated by the Department of National Defence between the airport and Smithers. Seventy customers were connected.

TERRACE.

One-half a mile of 2.3-kv line was built and eighty-nine customers were connected.

VANDERHOOF.

A street-lighting extension of twelve units was added and twenty-five customers were connected.

WILLIAMS LAKE.

One hundred and twenty poles were added, extending the 2.3-kv line to the shore of Williams Lake, where a municipal pumping plant was constructed and is being served. Sixty-five customers were added.

Summary of Circuit Miles of Distribution and Number of Customers as at March 31st, 1949.

District.	Miles of Line.	Number of Customers.	Customers per Mile.
The Albernis	88.5	3,790	42.8
Alert Bay	3.7	255	68.9
Burns Lake	3.0	154	51.3
Campbell River	37.4	837	22.3
Cumberland-Royston	27.8	940	33.8
Golden	10.0	218	21.8
Hope	14.7	494	33.5
Kamloops	70.0	3,607	51.5
Lillooet	5.8	135	23.3
Nakusp	17.7	346	19.5
Nanaimo-Duncan	550.2	10,740	19.5
North Okanagan	405.7	6,893	16.9
Peachland-Westbank	30.1	442	14.6
Quesnel	22.4	536	23.9
Sechelt	35.6	893	25.0
Smithers	38.4	496	12.9
Terrace	12.4	335	27.0
Vanderhoof	4.5	189	42.0
Williams Lake	11.3	319	28.2
Totals	1,389.2	31,619	22.7

IV. OPERATION.

1. PRODUCTION.

The John Hart hydro-electric generating-station, located at Campbell River, was placed in operation on January 11th, 1948, and has replaced all other generating plants operated by the Commission on Vancouver Island.

GENERATING CAPACITY IN OPERATION, MARCH 31ST, 1949.

Plant Location.	Active.			Inactive.		
	Type.*	Number of Units.	Capacity in Kva.	Type.*	Number of Units.	Capacity in Kva.
Alert Bay	D	3	437.5	D	3	230.0
Barriere	H	2	1,695.0	....	....	.....
Burns Lake	D	3	93.5	....	....	.....
Dawson Creek	D	4	1,150.0	....	....	.....
Golden	D	3	562.5	D	2	150.0
Hope	D	3	687.0	H	1	44.0
John Hart	H	2	50,000.0	....	....	.....
Kamloops	S	4	3,375.0	....	....	.....
Lillooet	D	3	250.0	....	....	.....
Nakusp	HD	2	375.0	H	1	125.0
Nanaimo	....	....	.....	SH	4	1,730.0
Peachland	....	....	.....	H	1	62.0
Port Alberni	....	....	.....	D	4	1,335.0
Quesnel	D	3	687.5	D	4	275.0
Sechelt	HD	4	700.0	....	....	.....
Shuswap Falls	H	2	6,500.0	....	....	.....
Smithers	D	3	749.0	D	2	105.0
Terrace	D	3	437.5	....	....	.....
Vanderhoof	D	3	437.5	D	1	45.0
Westbank	D	6	664.5	D	2	100.0
Williams Lake	D	5	781.5	....	....	.....
Totals	....	58	69,583.0	....	25	4,201.0

* NOTE.—D=diesel; H=hydro; S=steam.

A total of 800 kva additional 25-cycle capacity was purchased from Canadian Collieries (Dunsmuir), Limited, to supply the Cumberland-Royston district and the system formerly owned by the Vancouver Island Utilities, Limited.

The total system capacity was, therefore:—

	Kva.
Commission's active generating capacity	69,583
Purchased power	800
Total	70,383

Small amounts of power were also obtained at various times from other sources, as shown in the following table:—

POWER GENERATED AND PURCHASED.

I. *Generated (Kwh).*

Station.	Fiscal Year ended Mar. 31.		Difference.
	1949.	1948.	
Alert Bay	767,044	438,944	328,100
Barriere	9,346,210	10,041,876	*—695,666*
Burns Lake	142,792	43,415	99,377
Golden	480,662	254,875	225,787
Hope	1,358,450	708,010	650,440
John Hart	82,089,400	8,039,096	74,050,304
Kamloops	3,409,950	2,076,900	1,333,050
Lillooet	452,680	234,455	218,225
Nakusp	456,855	369,400	87,455
Nanaimo (three plants)	262,430	4,984,540	*—4,722,110*
Peachland and Westbank (two plants)	1,133,462	743,024	390,438
Port Alberni	49,048	1,990,224	*—1,941,176*
Quesnel	1,206,375	841,110	365,265
Sechelt	1,222,261	654,830	567,431
Shuswap Falls	23,903,090	21,019,150	2,883,940
Smithers	1,403,997	739,677	664,320
Terrace	422,031	257,667	164,364
Vanderhoof	456,079	275,297	180,782
Williams Lake	901,460	589,140	312,320
Totals	129,464,276	54,301,630	75,162,646

II. *Purchased (Kwh).*

From.	Fiscal Year ended Mar. 31.		Difference.
	1949.	1948.	
Vancouver Island Power Co., Ltd.	807,250	22,278,000	*—21,470,750*
Victoria Lumber Co., Ltd.	.....	2,195,780	*—2,195,780*
Bloedel, Stewart & Welch, Ltd.	17,600	867,700	*—850,100*
Alberni Pacific Lumber Co., Ltd.	28,990	1,996,900	*—1,967,910*
Canadian Collieries (D.), Ltd.	1,470,996	889,130	581,866
West Kootenay Power & Light Co., Ltd.	896,400	4,200	892,200
Totals	3,221,236	28,231,710	*—25,010,474*

Summary.

Total generated and purchased	132,685,512	82,533,340	50,152,172
Less station service	1,865,162	1,153,489	711,673
Totals	130,820,350	81,379,851	49,440,499

Disposition of Power.

		Kwh.
Net generated and purchased, 1948–49		130,820,350
Transmission and tranformation losses (8.7 per cent.)		11,433,435
Delivered, wholesale		119,386,915
Special-contract sales—		
West Kootenay Power & Light Co., Ltd.	1,038,000	
Construction, John Hart Development	260,025	
B.C. Electric Railway Co., Ltd.	1,164,250	
Bloedel, Stewart & Welch, Ltd.	28,585,400	
Nanaimo Sulphate Pulp Mill	93,960	
		31,141,635
Delivered to power districts and municipalities for distribution		88,245,280
Distribution losses (10 per cent.)		8,823,983
Distribution-system sales		79,421,297

The floods of May, 1948, affected production at several points. The Hope hydro plant was submerged, production from the Barriere plant was interrupted when flood-waters washed out sections of the pole-line connecting the plant with the Kamloops district, and at Lillooet the intake and part of the flume of the hydro-electric plant owned by the Pacific Great Eastern Railway but operated by the Commission was destroyed. At Peachland, high water interfered with the operation of the hydro-electric plant.

The diesel plant at Quesnel was threatened by an overflow of the Quesnel River, but the water did not reach the generator floor level, and for a time there was a threat to the plant at Nakusp, owing to high water in the Arrow Lakes.

An unprecedented cold spell in January, 1949, caused a frazil jam at Shuswap Falls, which reduced output seriously for periods varying from two to thirty-nine hours, during which power was purchased from the West Kootenay Power and Light Company, Limited.

Icing conditions also affected the output of the hydro-electric plant at Nakusp during the same period.

The maintenance of production plant included such items as the butt-strapping of two boilers at the Kamloops steam plant, constant repairs to the flume at the Barriere plant, and ordinary bearing and other minor repairs to various diesel units.

2. TRANSMISSION.

132-kv System.

The 132-kv transmission-loop system based on the John Hart station was brought into operation during the year, together with the two step-down transformer terminals at Port Alberni and near Nanaimo (Jinglepot Road).

An F.M. radiotelephone system was installed to facilitate the operation of the transmission system, with stations located at the generating-station, at Port Alberni, and at Nanaimo. In addition to these stations, two portable sets were installed in motor-vehicles, which will be used for line-operating and maintenance purposes.

Some minor operating difficulties with the 132-kv lines were experienced in November, due to wet snow accumulating on the conductors, accompanied by high winds. It was noted that the snow-loading was much less severe on the sections carrying the

greatest electrical load, as would be expected. As the transmitted electrical load increases, the heating effect is expected to prevent any further difficulties of this nature.

One brief interruption, due to a lightning flash-over, occurred in July.

All high-voltage porcelain at the Port Alberni substation was washed to eliminate the effect of air contamination from the pulp-mill near by.

60-kv System.

The unusually severe winter storms caused more than ordinary interruptions to the operation of the 60-kv line between Nanaimo and Duncan. However, at no time was service disrupted for any long duration, a 40-minute period in February being the longest.

The capacity of the Pine Street substation, which supplies Nanaimo, was increased from 3,000 kva to 7,500 kva.

45-kv System.

There were two major transmission interruptions to the Barriere-Kamloops 45-kv line of thirteen and fifteen hours on May 25th and 27th, due to the displacement of poles by flood-waters.

Other lines were affected in a minor degree at various times by lightning, falling trees, collisions with motor-vehicles, and—on one occasion—a conductor was severed by a rifle bullet.

Transmission-line maintenance included a limited amount of pole stubbing on the Barriere-Kamloops line, some right-of-way reclearing at several points, and some minor insulator replacements.

3. DISTRIBUTION.

On January 1st, 1949, the Commission acquired the distribution system operated by the Vancouver Island Utilities. This acquisition, together with extensions of distribution-lines in various districts and new connections to existing lines, resulted in an addition of 4,149 services, to bring the total number being supplied on March 31st, 1949, to 31,619 customers.

The various districts received 88,245,280 kwh for distribution, and customers' meters recorded total sales of 79,421,297 kwh for the year. The resulting distribution loss is 10 per cent. of energy received by the districts.

As an indication of the effect of the unusually severe winter weather, the distribution-lines of the Nanaimo-Duncan district suffered 41 interruptions—for the most part of short duration—to the 23-kv system, 76 to the 6.9-kv lines, and 128 to the 2.3-kv primary circuits.

Sub-normal voltages developed in various sections of the Alberni, Nanaimo-Duncan, Kamloops, and North Okanagan districts, due to rapid growth of loads. These conditions were corrected by a reinforcement of conductors, by replacing transformers with those of a larger capacity, and by, in some instances, a more efficient arrangement of primary lines.

The conversion of the 25-cycle system acquired on January 1st, 1949, from the Vancouver Island Utilities was commenced.

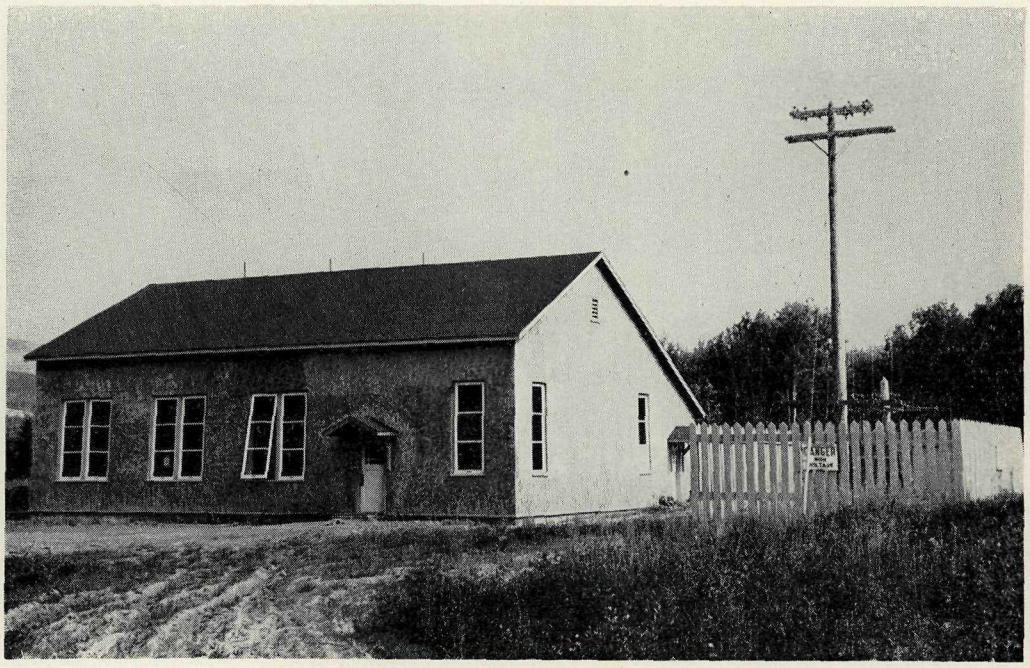
The Alert Bay system was completely reconstructed, and the replacement of 2,300-volt primary lines by those rated at 6,900/12,000 volts in the Sechelt district was well advanced.

The more significant items of maintenance consisted of the following:—

Alberni: 107 poles were replaced, and 14.5 miles of distribution-line along rural roads were replaced.

Cumberland: 25 poles were replaced, and 6.1 miles of 2.2-kv distribution-line were reconstructed, partly to increase the conducting capacity.

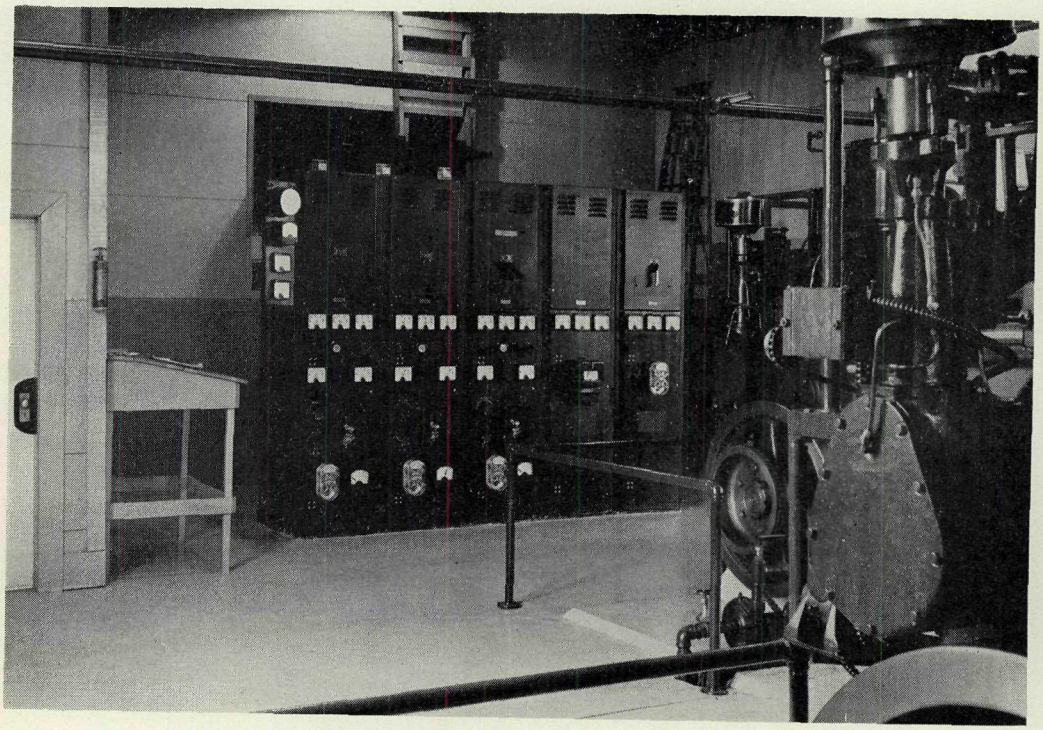
STANDARD DIESEL POWER-HOUSE—EXTERIOR.



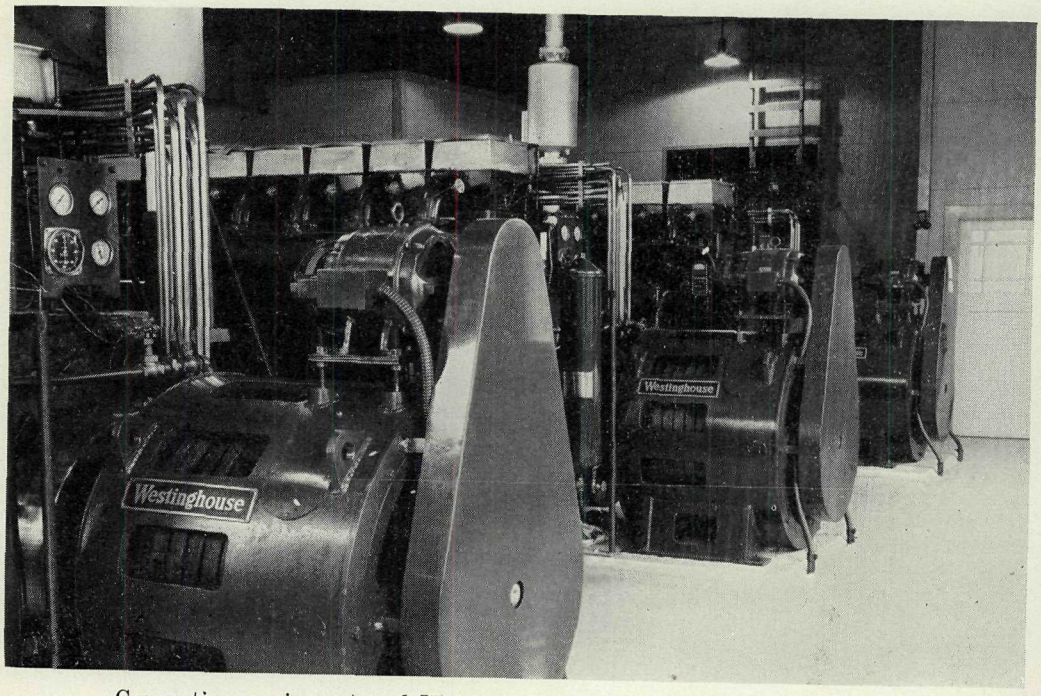
Smithers, B.C.

Golden, B.C.

STANDARD DIESEL POWER-HOUSE—INTERIOR.



Switchboard panels, Smithers power-house.



Generating equipment and Vivian prime mover, Smithers power-house.

Kamloops: 125 poles were replaced, and 15 miles of distribution-line reconstructed, partly to obtain greater capacity.

Nanaimo-Duncan: 252 poles were replaced, and 76.7 miles of distribution-line along rural roads were recleared by hand methods.

North Okanagan: A limited amount of pole stubbing, pole replacements, and reclearing was carried out.

In the other districts, routine maintenance of a minor nature only was required and performed.

4. RATE SCHEDULES.

As at March 31st, 1949, the Commission's scientifically designed promotional rates were available to 18,053 customers, or 57 per cent. of the total number then being served. This compares most favourably with the 3,764 customers, or 14 per cent., enjoying such schedules at the end of the preceding fiscal year. The increase was the result of bringing the Nanaimo-Duncan and Alberni Power Districts under the provisions of Regulation No. 5 (Rate Schedules) during the summer of 1948. Thirteen of the nineteen power districts controlled by the Commission were operating under promotional schedules at the end of the fiscal year.

Cumberland-Royston Power District, which is on a 25-cycle distribution system (along with the Courtenay-Comox territory to be acquired April 1st, 1949), is the only Vancouver Island area where no rate revision has yet taken place. The former customers of Vancouver Island Utilities, Limited, acquired January 1st, 1949, are being granted temporary rates of a promotional nature when ready to receive 60-cycle current now available from the John Hart Development. Upon completion of the switch-over the matter of rates in this recently added power district of Campbell River will be given further attention.

The remainder of the power districts still operating under the miscellaneous rate structures in effect when the properties were acquired—comprising four in number—are situated on the Mainland. The important Kamloops and North Okanagan Power Districts must await completion of the Whatshan Development before promotional schedules can be established, since the use of electrical energy in these areas cannot be encouraged until the present generating capacity is augmented.

The other two districts are Burns Lake and Lillooet. In the former district the promotional rates will become effective early in the next fiscal year, whilst at Lillooet an improved method of supplying power remains to be finalized.

The promotional rates now in effect are indicated 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.
The Albernis (Zone 1)	.55	7	2	8/10
,, ,, (Zone 2)	1.00	8	2	8/10
Alert Bay	1.00	12	2½	8/10
Golden (Zone 1)	1.00	12	2½	8/10
,, (Zone 2)	1.50	12	2½	8/10
Hope	1.00	10	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
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

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.
The Albernis (Zone 1)	6.00	8	2	½
,, ,, (Zone 2)	6.00	8	2	½
Alert Bay	6.00	12	2½	½
Golden (Zone 1)	6.00	12	2½	½
,, (Zone 2)	6.00	12	2½	½
Hope	6.00	10	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

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.
The Albernis (Zone 1)	1.00	8	4	½
,, ,, (Zone 2)	1.00	8	4	½
Alert Bay	1.00	12	4	½
Golden (Zone 1)	1.00	12	4	½
,, (Zone 2)	1.50	12	4	½
Hope	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
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

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

D. Power Service Rates.

(*a*) *Power Service.*—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-phase or three-phase, at available secondary voltages (550/220/110 volts).

(*b*) *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.

A uniform rate for each of these services is in effect in all zones of each power district operating under Regulation No. 5, namely: The Albernis, Alert Bay, Golden, Hope, Nakusp, Nanaimo-Duncan, Peachland-Westbank, Quesnel, Sechelt, Smithers, Terrace, Vanderhoof, Williams Lake.

The rates are as follows:—

	Power.	Primary Power.
Monthly service charge per kw of billing demand	$1.00	$0.85
Plus—		
First 50 kwh per month per kw of billing demand	3c. per kwh	
Next 50 kwh per month per kw of billing demand	1½c. per kwh	
Balance of monthly consumption	½c. per kwh	
Monthly minimum bill per kw of billing demand	$1.00	$0.85

Discount for prompt payment, 10 per cent.

Power loads supplied from the John Hart Development are first 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%

E. Street-lighting Service Rates.

A uniform street-lighting schedule, based upon the capacity of the lamp ratings, is in effect in all power districts operating under Regulation No. 5. A complete list of these thirteen power districts has been set out above. 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	0.55
	250 candle-power	1.75	1.00
	400 candle-power	2.10	1.35
	600 candle-power	2.60	1.85

V. SURVEYS AND INVESTIGATIONS.

1. POWER PROJECTS.

Surveys for a hydro-electric power-development at Clowhom Falls at the head of Salmon Arm, Sechelt Inlet, were made during the year. It is possible to develop 10,000 to 12,000 horse-power at this site, which is favourably situated for the supply of power to the Sechelt Peninsula.

Final surveys, plans, and specifications were made for the proposed hydro-electric development on Silver Creek, near Hope, in the Fraser Valley. It was decided, however, not to proceed with this project at the present time, as it was found possible to purchase power requirements for this community on favourable terms.

A topographical survey and study was made of the Seton Creek hydro-electric plant, near Lillooet. This small plant had been leased to the Commission by the Pacific Great Eastern Railway. A considerable length of the flume was destroyed by the 1948 spring flood, and the balance was in a very deteriorated condition. The object of the survey was to determine whether or not reconstruction of the plant would be economically sound. The conclusion was that reconstruction should not be undertaken and that other means of supplying power to Lillooet should be adopted.

2. TRANSMISSION PROJECTS.

Final location of the 132-kv transmission-line from Whatshan to Vernon was completed.

Engineering studies and preliminary planning of equipment requirements for delivering at Nanaimo a substantial block of power to the British Columbia Electric Railway for use in Greater Victoria were made. A contract between the company and the Commission providing for such delivery, to commence in September, 1950, will be submitted to the Government for approval.

3. DISTRIBUTION PROJECTS.

Surveys were made during the year in connection with the acquisition by the Commission of distribution-lines in the Courtenay-Comox area and in the territory between Courtenay and Campbell River.

Surveys were also made between Ucluelet and Tofino, between Hope and Wahleach Creek, at Blue River, in the Falkland-Westwold-Monte Lake area, and between Kamloops and Chase.

Studies were undertaken to determine the best method of consolidating distribution systems in the Coldstream Valley between Lumby and Vernon.

VI. FINANCIAL.

In this section, statements are presented showing the financial position of the undertakings of the Commission as at the close of its fourth fiscal period, the activities of which have been covered in the preceding sections of this Report. The statements include:—

1. Balance-sheet as at March 31st, 1949.
2. Combined operations, financial summary, for the year ended March 31st, 1949.
3. Power distribution, all districts—combined revenue and expenses for the year ended March 31st, 1949.
4. Power districts—financial statistics:—
   (*a*) Revenue, expenses, customers, and consumption, by individual districts, for the year ended March 31st, 1949.
   (*b*) Accumulated stabilization reserves, by districts, as at March 31st, 1949.
5. Plant and equipment in operation and related maintenance and renewals and sinking fund reserve balances as at March 31st, 1949.
6. Construction-work in progress as at March 31st, 1949.

Condensed summaries of operating revenues, expenses, provisions for reserves, and net surplus for the year ended March 31st, 1949, with comparative totals for the previous operating year, are given in the General Review section at the commencement of this Annual Report. Further details relative to total operating costs, allocation of cost of power, distribution expenses by separate power districts, etc., are shown in Statements 2, 3, and 4, and the district totals in respect to the accumulated stabilization reserve to March 31st, 1949, are also included with other financial data on Statement 4.

The cost of power charged to individual distribution districts is determined by the Commission in accordance with the terms of section 26 of the "Electric Power Act," separate cost records being maintained for each production and transmission unit operated. From the total cost of production and transmission thus obtained, special power sales are deducted (sections 21 and 22), and the combined net cost of power is determined. This is distributed at a uniform average kwh rate to the several power districts on the basis of the over-all kwh volume of power made available for distribution. The relative charges for power to each district on this basis are set out in Statement 4.

The reduction of the net operating surplus for the year ended March 31st, 1949, compared with the result for the previous year, is due principally to the large increase in interest and other fixed charges on the considerable capital expenditures for additional plant and equipment put into operation during the year, and from which only a lower-than-average revenue can be expected during the present development and extension stage of the Commission's activities.

The totals for plant and equipment in operation, summarized in the balance-sheet, include valuations established by the Commission in respect to properties acquired by expropriation proceedings in August and September, 1945, but for which the compensation is not yet determined. This matter has been the subject of extended hearings before a Judge of the Supreme Court during the past year under the "Electric Power Act," but the proceedings had not been concluded at the date of this Report.

Additional funds to finance new construction-work and additions to existing facilities have been received from the Provincial Government during the year under review, and total advances in this connection amounted to $28,395,800 as at March 31st, 1949. Interest to that date has been paid on these advances in the amounts determined and charged by the Department of Finance in accordance with the terms of section 51

of the "Electric Power Act," and payments on sinking fund account in relation to these advances have also been made as at March 31st, 1948, and March 31st, 1949.

Authority was requested and obtained from the Lieutenant-Governor in Council by the Commission to allow it to commence annual payments on sinking fund account on a two-year deferment basis. The amounts provided, however, by charges against operations to March 31st, 1949, have exceeded the minimum requirements of the deferment plan, and actual deposits to the Minister for sinking fund account have therefore been made up to the equivalent total of the sinking fund reserve as at balance-sheet date.

The maintenance and renewals reserve has been increased during the year by $233,177.11, representing the difference between $460,967.97 provided by charges at the various percentage rates authorized by the Commission and $227,790.86 actually expended, leaving a balance of $419,565.53 at credit of this reserve account as at March 31st, 1949.

Details of the individual amounts of both maintenance and renewals reserve and sinking fund reserve balances applicable to the capital investments as at March 31st, 1949, at the various locations operated by the Commission are set out in the plant and equipment expenditure summary included as Statement 5.

The balance in the contributory superannuation fund for the benefit of Commission employees was $300,191.86 as at March 31st, 1949, 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, 1949, and supporting statements, is included in this section.

BALANCE-SHEET AS

ASSETS.

Capital assets—			
Plant and equipment in operation, at values estimated by the Commission as at dates of acquisition plus subsequent rehabilitations and additions at cost—			
Generation			$10,634,242.29
Transmission			4,733,437.91
Distribution			5,155,691.05
General			456,609.82
			$20,979,981.07
Construction-work in progress—			
Generation		$6,449,439.45	
Transmission		850,791.31	
Distribution		451,585.56	
General		1,021.75	
			7,752,838.07
Total plant and equipment			$28,732,819.14
Surveys and investigations			41,513.44
Acquisition costs and adjustments			320,169.81
Total capital assets			$29,094,502.39
Current assets—			
Cash on hand and in banks		$941,345.46	
Accounts receivable—			
Light and power customers	$158,193.21		
Miscellaneous	11,479.11		
		169,672.32	
Inventories of construction and operating stores and supplies		564,447.35	
Unexpired insurance		29,562.17	
			1,705,027.30
Deferred charge—Unamortized organization and preliminary expenses			143,154.25
Sinking fund for retirement of Government advances—Deposits with Minister of Finance			507,395.60
			$31,450,079.54

AT MARCH 31ST, 1949. Statement 1.

LIABILITIES.

Advances from the Government of the Province of British Columbia		$28,395,800.00
Liability (estimated net) in respect of acquired plant and equipment for which compensation has not been determined		358,671.44
Current liabilities—		
Accounts payable and accrued charges	$252,688.91	
Gross revenue taxes in respect of light and power service in municipal areas (section 62)	51,874.11	
Customers' deposits	117,917.38	
		422,480.40
General reserves—		
Maintenance and renewals	$419,565.53	
Gross revenue assessments, unorganized areas (section 64)	59,783.45	
Interest	240,660.17	
Contingencies	365,742.64	
		1,085,751.79
Stabilization reserve—		
Balance at credit March 31st, 1948	$642,677.62	
Surplus from operations, year to March 31st, 1949	37,302.69	
		679,980.31
Sinking fund reserve		507,395.60
		$31,450,079.54

The Chairman and Commissioners,
British Columbia Power Commission,
Victoria, B.C.

Gentlemen,—We have examined the balance-sheet of the British Columbia Power Commission as at March 31, 1949, and the attached statement of combined operations for the year ended on that date, and have obtained all the information and explanations which we 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.

As previously reported by us, proceedings are in progress under the terms of the "Electric Power Act" to determine the compensation to be paid for certain properties expropriated. Until such time as these proceedings are completed the liability in respect of these properties must be considered as an estimate only.

Authorization has been obtained from the Lieutenant-Governor in Council for a two-year deferment of Sinking Fund payments as provided under subsection (2) of section 52 of the "Electric Power Act."

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, 1949, 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.

Respectfully submitted,

ISMAY, BOISTON, DUNN & CO.,
Chartered Accountants, Auditors.

Victoria, B.C.,
June 23rd, 1949.

Statement 2.

COMBINED OPERATIONS: FINANCIAL SUMMARY—REVENUE AND EXPENSES—FOR THE YEAR ENDED MARCH 31ST, 1949.

	Total.
REVENUE—	
Power districts—	
Electrical-energy sales	$2,404,671.87
Miscellaneous revenue	26,636.59
	$2,431,308.46
Special-contract sales, under sections 21 and 22, "Electric Power Act"	118,954.82
	$2,550,263.28

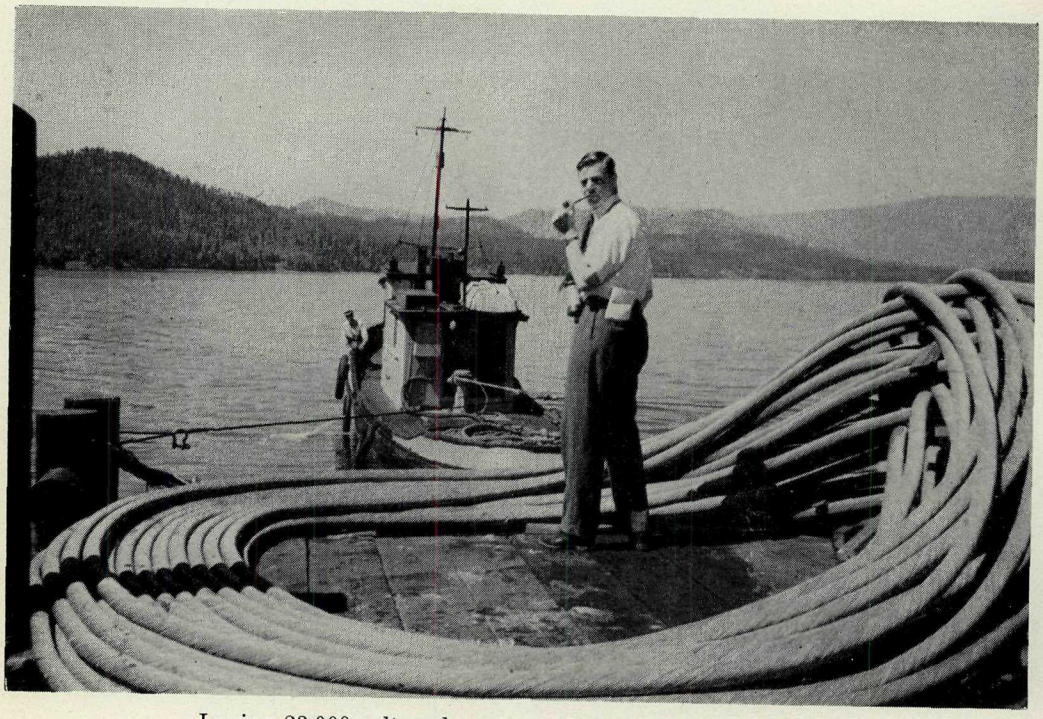
EXPENSES—	OPERATING COSTS.			
Direct—	Generation.	Transmission.	Distribution.	
Labour	$261,243.22	$6,074.59	$149,355.16	$416,672.97
Fuel	216,549.44			216,549.44
Other operating expenses	65,607.98	3,468.69	41,274.74	110,351.41
Customer accounting			157,311.86	157,311.86
Gross revenue, 3% assessments			71,044.90	71,044.90
Administration and general expenses	74,968.80	1,778.65	79,181.03	155,928.48
Purchased power	35,427.03			35,427.03
	$653,796.47	$11,321.93	$498,167.69	$1,163,286.09
Interest on investment in operated plant	271,753.20	120,393.24	125,573.88	517,720.32
	$925,549.67	$131,715.17	$623,741.57	$1,681,006.41
OPERATING SURPLUS (excluding provision for reserves)				$869,256.87
Provision for reserves—				
Maintenance and renewals	$161,152.02	$72,880.07	$184,291.49	$418,323.58
Sinking fund	135,876.48	60,196.62	62,787.64	258,860.74
Contingencies	66,829.20	16,451.34	71,489.32	154,769.86
	$363,857.70	$149,528.03	$318,568.45	$831,954.18
NET OPERATING SURPLUS, year ended March 31st, 1949 (transferred to stabilization reserve)				$37,302.69

Statement 3.

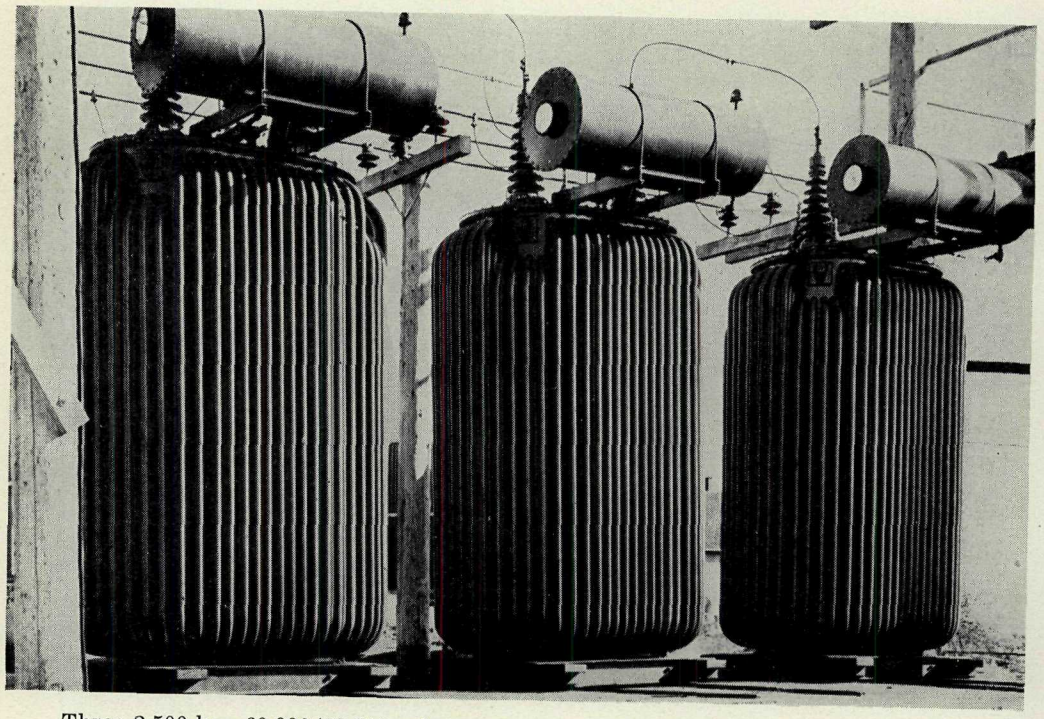
POWER DISTRIBUTION, ALL DISTRICTS: SUMMARY OF REVENUE AND EXPENSES FOR THE TWELVE-MONTH PERIOD ENDED MARCH 31ST, 1949.

REVENUE—			
Electrical-energy sales			$2,404,671.87
Miscellaneous revenue			26,636.59
Total power district revenue			$2,431,308.46
EXPENSES (Detailed on Statement 2)—			
Cost of power—			
Direct expenses—			
Generation	$925,549.67		
Transmission	131,715.17		
		$1,057,264.84	
Provision for reserves—			
Generation	$363,857.70		
Transmission	149,528.03		
		513,385.73	
		$1,570,650.57	
Less special-contract sales under sections 21 and 22, "Electric Power Act"		118,954.82	
Cost of power delivered to distribution systems			$1,451,695.75
Distribution services—			
Direct expenses—			
Operating and administrative	$498,167.69		
Interest on distribution plant	125,573.88		
		$623,741.57	
Provision for reserves—			
Maintenance and renewals	$184,291.49		
Sinking fund	62,787.64		
Contingencies	71,489.32		
		318,568.45	
Total distribution services			942,310.02
Total expenses			$2,394,005.77
NET OPERATING SURPLUS (transferred to stabilization reserve)			$37,302.69

NANAIMO-DUNCAN POWER DISTRICT.



Laying 23,000-volt underwater cable to Saltspring Island.



Three 2,500-kva 60,000/23,000-volt transformers, Pine Street Substation, Nanaimo.

Statement 4.

POWER DISTRIBUTION BY DISTRICTS.

(*a*) Summary of Revenue and Expenditure for the Twelve-month Period ended March 31st, 1949, and (*b*) Accumulated Stabilization Reserve as at that Date.

	The Albernis.	Alert Bay.	Burns Lake.	Campbell River.	Cumberland-Royston.	Golden.	Hope.	Kamloops.	Lillooet.	Nakusp.	Nanaimo-Duncan.	North Okanagan.	Peachland-Westbank.	Quesnel.	Sechelt.	Smithers.	Terrace.	Vanderhoof.	Williams Lake.	Totals.
Revenue—																				
Sales to municipalities	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$37,013.20	.....	.....	.....	.....	.....	.....	.....	.....	$37,013.20
Residential	$136,368.13	$8,896.85	$5,917.23	$6,543.76	$37,677.14	$6,846.84	$16,558.16	$124,136.04	$5,782.38	$11,278.30	377,286.59	$256,731.80	$15,424.04	$15,435.00	$29,691.16	$15,814.70	$9,853.09	$5,858.85	$9,625.70	1,095,725.76
Commercial	81,429.61	10,817.20	7,293.14	4,812.59	11,632.05	8,098.93	15,721.28	157,761.03	6,714.59	5,399.76	230,543.15	158,666.22	7,444.17	17,464.16	10,946.95	14,248.84	6,649.24	6,608.10	16,069.72	778,320.73
Summer	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	395.48	.....	.....	.....	700.37	.....	.....	.....	.....	1,095.85
Power	11,592.13	1,547.41	1,675.04	944.98	2,547.31	417.82	1,678.91	60,027.38	1,696.03	361.70	63,379.90	135,136.91	5,519.45	1,769.23	783.63	6,234.69	1,033.73	560.09	1,813.19	298,719.53
Irrigation power	.....	.....	.....	.....	.....	.....	.....	10,106.59	.....	.....	.....	7,301.21	1,074.91	.....	.....	.....	.....	.....	.....	18,482.71
Primary power	12,795.46	.....	.....	.....	.....	.....	.....	566.48	.....	.....	112,781.25	.....	.....	764.58	2,599.15	.....	.....	.....	.....	129,506.92
Street-lighting	6,376.81	169.02	362.98	77.65	2,598.61	796.76	1,110.00	4,772.75	.....	301.79	13,940.97	10,672.98	730.00	776.80	306.28	1,078.00	497.27	446.50	792.00	45,807.17
Sub-total	$248,562.14	$21,430.48	$15,248.39	$12,378.98	$54,455.11	$16,160.35	$35,068.35	$357,370.27	$14,193.00	$17,341.55	$835,340.54	$568,509.12	$30,192.57	$36,209.77	$45,027.54	$37,376.23	$18,033.33	$13,473.54	$28,300.61	$2,404,671.87
Miscellaneous	2,728.57	247.45	130.84	.....	2,360.86	326.04	758.75	1,773.95	5.22	220.83	9,197.17	5,526.06	284.49	1,181.44	503.67	523.90	238.92	157.91	470.52	26,636.59
Total revenue	$251,290.71	$21,677.93	$15,379.23	$12,378.98	$56,815.97	$16,486.39	$35,827.10	$359,144.22	$14,198.22	$17,562.38	$844,537.71	$574,035.18	$30,477.06	$37,391.21	$45,531.21	$37,900.13	$18,272.25	$13,631.45	$28,771.13	$2,431,308.46
Expenses—																				
Allocated cost of power production	$147,294.02	$11,682.79	$2,328.30	$4,105.17	$20,248.55	$7,098.31	$21,344.05	$191,840.81	$7,134.33	$7,375.58	$610,201.84	$315,979.82	$17,661.28	$18,289.86	$19,346.19	$22,666.58	$6,273.31	$6,556.19	$14,268.77	$1,451,695.75
Distribution expenses, direct—																				
Operating and administrative	50,369.95	6,455.51	3,108.54	1,841.03	17,054.15	6,339.59	9,071.49	62,944.80	6,242.34	7,485.41	164,952.17	100,428.31	8,670.14	8,676.72	13,230.07	9,669.89	7.217.31	6,660.50	7,749.77	498,167.69
Interest on distribution investment	13,311.50	551.17	176.40	664.26	2,128.93	1,578.17	2,262.10	11,591.84	217.62	2,072.72	45,881.98	28,920.31	3,504.14	1,198.13	4,306.01	3,202.27	1,530.69	1,212.05	1,263.59	125,573.88
	$210,975.47	$18,689.47	$5,613.24	$6,610.46	$39,431.63	$15,016.07	$32,677.64	$266,377.45	$13,594.29	$16,933.71	$821,035.99	$445,328.44	$29,835.56	$28,164.71	$36,882.27	$35,538.74	$15,021.31	$14,428.74	$23,282.13	$2,075,437.32
Operating surplus before provision for distribution reserves	$40,315.24	$2,988.46	$9,765.99	$5,768.52	$17,384.34	$1,470.32	$3,149.46	$92,766.77	$603.93	$628.67	$23,501.72	$128,706.74	$641.50	$9,226.50	$8,648.94	$2,361.39	$3,250.94	*—$797.29*	$5,489.00	$355,871.14
Provision for distribution reserves—																				
Maintenance and renewals	$26,305.59	$1,637.12	$464.22	$564.52	$4,212.21	$1,717.25	$2,535.00	$23,027.30	$638.74	$2,272.80	$70,406.48	$32,512.12	$3,752.09	$1,485.03	$4,765.74	$3,480.48	$1,724.31	$1,335.64	$1,454.85	$184,291.49
Sinking fund	6,655.68	275.55	88.20	333.13	1,064.43	789.08	1,131.05	5,795.87	108.84	1,036.39	22,940.95	14,460.13	1,752.01	599.06	2,153.00	1,601.13	765.32	606.02	631.80	62,787.64
Contingencies	7,389.72	267.48	57.24	274.00	1,051.02	966.72	1,314.54	6,315.00	92.22	1,246.32	26,381.04	16,580.16	2,162.94	588.78	2,520.90	1,940.52	889.20	734.10	717.42	71,489.32
	$40,350.99	$2,180.15	$609.66	$1,171.65	$6,327.66	$3,473.05	$4,980.59	$35,138.17	$839.80	$4,555.51	$119,728.47	$63,552.41	$7,667.04	$2,672.87	$9,439.64	$7,022.13	$3,378.83	$2,675.76	$2,804.07	$318,568.45
Surplus for year ended Mar. 31, 1949	*—$35.75*	$808.31	$9,156.33	$4,596.87	$11,056.68	*—$2,002.73*	*—$1,831.13*	$57,628.60	*—$235.87*	*—$3,926.84*	*—$96,226.75*	$65,154.33	*—$7,025.54*	$6,553.63	*—$790.70*	*—$4,660.74*	*—$127.89*	*—$3,473.05*	$2,684.93	$37,302.69
Stabilization reserve, April 1, 1948	40,214.85	23,561.39	3,565.57	.....	5,763.59	18,175.72	19,077.43	94,258.79	262.92	4,889.02	221,178.54	101,449.32	3,572.29	27,962.07	11,971.20	25,355.39	6,292.97	12,246.10	22,880.46	642,677.62
Adjustment to stabilization reserve, April 1, 1948	9,770.06	*—61.06*	*—6.47*	.....	*—134.42*	*—35.58*	*—104.75*	*—1,664.91*	*—33.55*	*—54.92*	*—4,502.76*	*—2,590.29*	*—105.81*	*—118.10*	*—93.62*	*—108.07*	*—33.72*	*—36.31*	*—85.72*	.....
Accumulated stabilization reserve, Mar. 31, 1949	$49,949.16	$24,308.64	$12,715.43	$4,596.87	$16,685.85	$16,137.41	$17,141.55	$150,222.48	*—$6.50*	$907.26	$120,449.03	$164,013.36	*—$3,559.06*	$34,397.60	$11,086.88	$20,586.58	$6,131.36	$8,736.74	$25,479.67	$679,980.31
Customers—																				
Residential	3,208	169	109	713	860	158	398	2,778	81	272	9,102	5,660	360	403	763	369	261	125	202	25,991
Commercial	534	75	36	120	75	54	91	710	40	65	1,503	976	64	115	120	108	66	57	102	4,911
Power	46	8	8	3	3	5	4	118	14	8	131	244	16	17	8	17	7	6	14	677
Street-lighting	2	3	1	1	2	1	1	1	.....	1	4	13	2	1	2	2	1	1	1	40
	3,790	255	154	837	940	218	494	3,607	135	346	10,740	6,893	442	536	893	496	335	189	319	31,619
Kwh—																				
Residential	3,765,710	194,099	32,646	91,199	521,950	102,008	349,212	3,717,417	83,536	203,261	9,802,055	7,034,583	331,954	273,872	446,248	333,809	136,816	114,864	197,675	27,732,914
Commercial	2,901,691	356,670	49,924	75,319	270,818	210,186	497,161	3,034,725	192,801	129,445	7,473,774	3,772,011	172,653	458,739	315,380	445,398	133,184	177,005	432,245	21,099,129
Power	1,028,897	54,202	18,801	26,896	95,115	5,631	75,516	3,164,181	33,621	5,195	15,227,253	7,959,110	368,399	165,523	97,746	478,732	30,494	9,884	64,472	28,909,668
Street-lighting	154,383	3,800	17,544	1,553	77,731	33,104	52,680	197,149	.....	6,314	467,616	489,535	27,291	40,006	11,498	33,415	20,530	16,140	29,297	1,679,586
	7,850,681	608,771	118,915	194,967	965,614	350,929	974,569	10,113,472	309,958	344,215	32,970,698	19,255,239	900,297	938,140	870,872	1,291,354	321,024	317,893	723,689	79,421,297

Statement 5.

PLANT AND EQUIPMENT IN OPERATION AS AT MARCH 31ST, 1949.

Undertaking.	Book Values.			Maintenance and Renewals Reserve as at Mar. 31, 1949.	Sinking Fund Reserve as at Mar. 31, 1949.
	Totals as at Mar. 31, 1948.	Additions, Year ended Mar. 31, 1949.	Totals as at Mar. 31, 1949.		
Generating Plant.					
The Albernis	$159,212.50	*—$5,645.25*	$153,567.25	$9,351.62	$7,670.56
Alert Bay	132,263.11	616.41	132,879.52	6,218.87	3,332.76
Barriere	368,380.30	3,838.97	372,219.27	7,187.19	12,097.23
Burns Lake	5,170.34	181.50	5,351.84	*—113.20*	151.15
Dawson Creek	45,118.74	.....	45,118.74	5,937.50	562.50
Golden	137,480.90	*—1,059.59*	136,421.31	4,275.72	3,957.02
Hope	79,561.95	39,385.95	118,947.90	4,512.51	3,190.70
John Hart	.....	7,200,807.91	7,200,807.91	42,488.98	85,192.02
Kamloops	283,048.23	48,062.25	331,110.48	*—4,895.58*	12,616.98
Lillooet	13,887.42	11,502.21	25,389.63	1,664.44	400.76
Nakusp	29,234.16	22,247.95	51,482.11	796.83	1,295.90
Nanaimo	293,797.70	*—83,060.65*	210,737.05	8,148.00	16,697.11
Peachland-Westbank	83,347.16	16,108.57	99,455.73	*—647.21*	2,540.42
Quesnel	175,158.50	*—3,026.36*	172,132.14	11,255.70	6,654.31
Sechelt	52,246.48	24,773.80	77,020.28	5,931.85	2,553.41
Shuswap	1,052,146.88	*—2,402.78*	1,049,744.10	28,032.81	75,082.07
Smithers	128,346.04	1,607.52	129,953.56	7,734.00	4,306.56
Terrace	72,230.31	1,277.38	73,507.69	2,868.68	2,401.89
Vanderhoof	142,213.67	*—7,456.59*	134,757.08	7,342.21	4,436.41
Williams Lake	72,101.82	41,536.88	113,638.70	*—536.90*	3,344.89
Totals	$3,324,946.21	$7,309,296.08	$10,634,242.29	$147,554.02	$248,484.65
Transmission Plant.					
Kamloops	$176,837.50	$653.15	$177,490.65	$8,237.74	$4,580.70
Okanagan	513,598.34	2,767.94	516,366.28	39,009.23	25,534.04
Vancouver Island	130,746.16	3,908,834.82	4,039,580.98	22,147.43	61,806.46
Totals	$821,182.00	$3,912,255.91	$4,733,437.91	$69,394.40	$91,921.20
Distribution Plant.					
The Albernis	$367,010.36	$48,769.55	$415,779.91	$12,643.08	$14,125.51
Alert Bay	13,308.10	5,909.85	19,217.95	1,558.66	757.53
Burns Lake	2,107.21	26,509.83	28,617.04	383.17	61.76
Campbell River	.....	82,490.36	82,490.36	414.50	292.00
Cumberland-Royston	49,700.03	18,032.27	67,732.30	2,046.98	1,673.38
Golden	48,241.00	792.79	49,033.79	*—535.48*	1,218.51
Hope	65,386.61	7,264.92	72,651.53	1,634.35	1,935.60
Kamloops	308,894.13	68,011.10	376,905.23	6,759.16	7,946.48
Lillooet	4,669.11	3,043.84	7,712.95	*—716.11*	160.10
Nakusp	61,725.44	3,059.48	64,784.92	2,152.98	1,741.89
Nanaimo-Duncan	1,263,974.43	283,137.69	1,547,112.12	12,786.78	60,509.35
North Okanagan	822,261.19	238,769.54	1,061,030.73	30,192.55	47,071.17
Peachland-Westbank	103,195.74	12,808.85	116,004.59	2,277.19	2,583.61
Quesnel	29,150.45	58,537.02	87,687.47	1,403.07	1,536.62
Sechelt	124,640.89	26,172.70	150,813.59	1,463.63	4,353.78
Smithers	93,393.30	11,801.08	105,194.38	949.88	2,187.57
Terrace	44,179.63	3,420.43	47,600.06	1,555.37	911.75
Vanderhoof	37,155.90	*—1,811.56*	35,344.34	*—283.67*	1,011.79
Williams Lake	35,385.58	3,123.03	38,508.61	903.17	1,067.15
Meters	608,406.52	173,062.66	781,469.18	26,211.34	9,084.18
Totals	$4,082,785.62	$1,072,905.43	$5,155,691.05	$103,800.60	$160,229.73

Statement 5—*Continued.*

PLANT AND EQUIPMENT IN OPERATION AS AT MARCH 31ST, 1949—*Continued.*

Undertaking.	Book Values.			Maintenance and Renewals Reserve as at Mar. 31, 1949.	Sinking Fund Reserve as at Mar. 31, 1949.
	Totals as at Mar. 31, 1948.	Additions, Year ended Mar. 31, 1949.	Totals as at Mar. 31, 1949		
General Plant.					
Service buildings and equipment	$187,700.72	$29,785.68	$217,486.40	$17,707.22	$6,760.02
Transportation equipment	124,482.38	62,328.69	186,811.07	66,020.43	.....
Construction tools and equipment	58,108.64	*—5,796.29*	52,312.35	15,088.86	.....
Totals	$370,291.74	$86,318.08	$456,609.82	$98,816.51	$6,760.02
Summary.					
Generating plant	$3,324,946.21	$7,309,296.08	$10,634,242.29	$147,554.02	$248,484.65
Transmission plant	821,182.00	3,912,255.91	4,733,437.91	69,394.40	91,921.20
Distribution plant	4,082,785.62	1,072,905.43	5,155,691.05	103,800.60	160,229.73
General plant	370,291.74	86,318.08	456,609.82	98,816.51	6,760.02
Totals	$8,599,205.57	$12,380,775.50	$20,979,981.07	$419,565.53	$507,395.60

Statement 6.

STATEMENT OF CONSTRUCTION-WORK IN PROGRESS AS AT MARCH 31ST, 1949.

Generating Plant.

Barriere	$1,164.76
Bamfield (survey)	552.80
Burns Lake	8,453.54
Dawson Creek	258.85
Hazelton (survey)	179.05
Hope	59,018.06
John Hart	5,202,989.84
Kamloops	27,394.43
Lillooet	641.84
Nakusp	25,315.04
Nanaimo	1,248.80
Peachland-Westbank	661.20
Quesnel	2,370.03
Sechelt	15,029.25
Smithers	31,560.67
Terrace	28,254.24
Vanderhoof	450.72
Whatshan	1,006,517.31
Williams Lake	456.00
Small surveys unclassified	690.09
Diesel engines not yet placed	36,232.93
Total	$6,449,439.45

Statement 6—*Continued.*

STATEMENT OF CONSTRUCTION-WORK IN PROGRESS AS AT MARCH 31ST, 1949—*Continued.*

Transmission Plant.

Kamloops-Barriere	$3,860.53
North Okanagan	6,333.27
Vancouver Island	83,628.05
Vernon-Kamloops	617,248.24
Vernon-Whatshan	139,721.22
Total	$850,791.31

Distribution Plant.

The Albernis	$37,528.05
Alert Bay	12,553.78
Burns Lake	344.78
Campbell River	58,018.52
Golden	1,192.41
Hazelton (survey)	27.72
Hope	55,150.86
Kamloops	65,222.85
Lillooet	3,037.47
Nakusp	2,211.94
Nanaimo-Duncan	96,688.79
North Okanagan	44,091.18
Peachland-Westbank	1,471.29
Quesnel	13,320.56
Sechelt	30,263.16
Smithers	22,399.36
Terrace	597.18
Williams Lake	7,465.66
Total	$451,585.56

General Plant.

Service buildings and equipment	$358.22
Transportation equipment	663.53
Total	$1,021.75

Summary.

Generation plant	$6,449,439.45
Transmission plant	850,791.31
Distribution plant	451,585.56
General plant	1,021.75
Total	$7,752,838.07

VICTORIA, B.C.:
Printed by DON MCDIARMID, *Printer to the King's Most Excellent Majesty.*
1949.

2,295-549-9655

PACIFIC OCEAN
QUEEN CHARLOTTE ISLANDS
VANCOUVER ISLAND
U. S. A.
International Boundary
Interprovincial Boundary
Liard River
Fort Nelson River
Kechika River
Pine River
Peace River
Parsnip River
Finlay River
Omineca River
Nass River
Skeena River
Bulkley River
Francois Lake
Ootsa Lake
Eutsuk Lake
Tahtsa Lake
Babine Lake
Trembleur Lake
Stuart Lake
Quesnel Lake
Murtle Lake
Chilko Lake
Harrison Lake
Okanagan Lake
Adams Lake
Shuswap Lake
Upper Arrow Lake
Lower Arrow Lake
Kootenay Lake
Dawson Creek
Airport
Smithers
Telkwa
Terrace
Burns Lake
Vanderhoof
Quesnel
Williams Lake
Lillooet
Alert Bay
Hope
Golden
Nakusp
Whatshan (Project)
Sicamous
Canoe
Salmon Arm
Enderby
Armstrong
Shuswap Falls
Lumby
Vernon
Coldstream
Oyama
Woods Lake
Westbank
Peachland
North Kamloops
Kamloops
Heffley Creek
Louis Creek
Barriere
John Hart Development
Campbell River
Merville
Cumberland
Royston
Qualicum
Parksville
Port Alberni
Nanaimo
Chemainus
Duncan
Saltspring
Sechelt
VANCOUVER
VICTORIA
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: 1 MILES
DATE: 31st March, 1949.
DRWG. No. G-98. G-189
E 452 2095
CHIEF OPERATIONS ENGINEER.