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CONFIDENTIAL

12967-2 (Conf.)
Northern Development

R. BLAIS, CHIEF ENGINEER, PWD - O T T A W A

I am replying to your letters of December 5th, December 10th and December 13th, 1949, in reference to a survey of electrical conditions and the needs of the several Dominion Government departments at Fort Vermilion, Alberta.

1. DESCRIPTION OF SETTLEMENT:

Fort Vermilion is a Settlement on the Peace River, some 160 miles north easterly, as the crow flies, from the town of Peace River, Alberta. It is in the midst of a rich agricultural area and the local Post Office, which serves a large area, is stated to service some 3,000 people. The area is without a railroad and has been bypassed by the Grimshaw-Hay River Highway (Mackenzie Highway) which passes some 40 to 50 miles westerly of Fort Vermilion Settlement. There thus does not appear to be any prospect of a large increase in population at this place. In fact, the Mackenzie Highway may detract in future from the importance of this Settlement which up to now has been the centre of the surrounding area. At the present time there is located at Fort Vermilion an Agricultural Experimental Station, a Residential School, Hospital, Roman Catholic Mission, and also a Hudson's Bay Post, and several privately-owned stores. A landing strip built by the Canadian Pacific Airlines is located here and has been passed by the Department of Transport as a safe landing place for smaller planes during the day time.

2. NORTHLAND UTILITIES LIMITED

Several interviews have been held with the officers of this Company and the proposition fully explored as to whether or not this Company would be prepared to become established at Fort Vermilion and generate electrical power for the Settlement which would also serve the needs of the several Dominion Government departments. Attached hereto is copy of their letter of February 8, 1950, the gist of which is that there is not enough business in prospect at that locality at the present time to warrant their making a capital investment and becoming interested in such a venture at this time. If the area grew, however, and a larger market for electrical power was assured at a later date, there appears a prospect that this Company might then be interested.

3. VISIT OF INSPECTION BY ENGINEER

This Settlement was visited on January 21st, 1950, by Mr. O. A. Walrath of this office, and attached hereto is copy of his report, dated January 21st, 1950.

There is also supplied a list of the buildings and establishments in Fort Vermilion showing their present and estimated future requirements of electrical power. It will be noted the total estimated load in the Settlement amounts to 226,000 watts.

4. BOARD OF PUBLIC UTILITIES COMMISSIONERS OF THE PROVINCE OF ALBERTA

On February 10, 1950, an interview was held between officers of Northland Utilities and myself, with Mr. Bruce V. Massie, Commissioner of the Board of Public Utilities Commissioners of Alberta

The situation was fully explained to Mr. Massie, and the relatively small requirements of the Settlement pointed out. It was stressed that rates for electrical power should not be such as to discourage private users from taking electrical power, providing this could be arranged for, in the event of central power plant with transmission line being established under some agency as yet not determined. Mr. Massie was agreeable to the proposition and although he could not give an undertaking in writing, in the absence of a formal written proposition intimated that at any time due consideration would be given if a central power station, &c. were established.

5 DEPARTMENT OF INDUSTRIES AND LABOUR (Co-operative Activities and Credit Union Branch)

On February 10, 1950, an interview was held with officials of Northland Utilities and myself, with Mr. A. Peart, Deputy Supervisor, Co-operative Activities. Attached hereto is copy of letter of February 14, 1950 outlining the possibilities of the formation of a co-operative association which would invest in and become responsible for the operation of an electrical power installation. Attached thereto was literature regarding the procedure to be followed in the formation of such a local co-operative group.

6. ORGANIZATION OF SETTLEMENT FOR CENTRAL POWER STATION AND TRANSMISSION LINE

From the above data, it is clear that a privately owned utility company such as Northland Utilities Limited, is not interested in entering Fort Vermilion field. The only alternative, if the needs of everyone in the Settlement are to be met, is for an organization under a co-operative unit to be formed amongst the interested and progressive people in the Settlement. The difficulty here is that the several Dominion Government departments are more vitally concerned than the remainder of the Settlement, and the local people by themselves would probably be incapable of properly organizing and forming a co-operative group. An opportunity might, however, be given to the local people to ascertain whether or not they are interested. Undue time, however, should not be taken in this enquiry, as in the meantime the needs of the several Dominion Government Departments for electrical power have not been met and are growing progressively worse as time elapses. The alternative appears to be for the several Dominion Government departments to organize for their own needs. If, at a later date, the private citizens and other organizations, wish to come under the benefits of electrical power and by then see the installation already completed, they may possibly at some later date approach the Government with some tangible financial proposition; in other words, without too much delay several Dominion Government departments should attend promptly to their own needs.

7. CENTRAL POWER PLANT AND TRANSMISSION LINE FOR DOMINION GOVERNMENT DEPARTMENTS ONLY

If a transmission line is built to serve the several Dominion Government departments, it will practically pass most of the area of the built-up settlement. The central power station is suggested to be located on the Dominion Government telegraphic lot, which is a central location in the area. In discussing the needs of the several Dominion Government departments, the Royal Canadian Mounted Police is not included, as this organization is located in a rented building and there appears some uncertainty whether or not its officers will be permanently stationed there.

A factor to be considered in providing central power is that there be sufficient load on the generating unit to warrant

economical operation. With the proposed installation of two 22½ K.V.A., 3 phase, generating units, there would be sufficient power to have one unit run efficiently, and maintain the additional unit as a standby. The inclusion, however, of the hospital on the electrical load would just balance it to the extent that one 22½ KVA unit could be run efficiently. It appears reasonable that as the hospital is operated largely for the Indians of the area, the Indian Affairs Branch would not probably object to the hospital being connected to the electrical distribution line. This is a point for Indian Affairs Branch to give a final ruling on. It is evident that if the Dominion Government departments erect a central power station and transmission line for its own needs it cannot supply power to private individuals. By so doing, the Provincial laws would be broken, and furthermore, there is no organization set up for reading of meters, submitting accounts, collecting monthly payments, &c. &c. Thus when the Dominion Government departments make an installation for their own needs, they must refuse to supply service to any private individual. If private individuals wish, when the installation has been in operation for a couple of years and is an assured success, to obtain the benefits of electricity an opportunity would then be available for them to form a co-operative association and make some financial proposition to the Dominion Government.

8. REQUIREMENTS OF INDIAN AFFAIRS BRANCH

Your letter of December 13th, with attached copy of letter of December 6, 1949, from W.J.F. Pratt, to the Chief Engineer of this Department asked for information separately as to what power and installation would be required at the buildings of the Indian Agency and of the church owned Residential School should it not be feasible to install a central power plant to serve all departments. This information is as follows:

Assuming a separate installation at the Indian Agent's residence and at the Residential School --

Installation at Indian Agent's Residence	\$1716.40
Installation at Residential School	5500.00
<u>TOTAL</u>	<u>\$7216.40</u>

There will, of course, be also required relatively high operating costs for the two separate generating plants. During Mr. Walrath's recent visit he learned that generating unit had recently been installed at the Residential School, to serve the ir immediate needs. The providing of this unit now, however, does not seriously affect the overall proposal of central power for this Settlement, as there is a demand at all times for small generating units which can be moved to other locations by the Dominion Government departments concerned. It may be pointed out, however, that if each Dominion Government department places separate plants at Fort Vermilion, at a relatively high cost of the total installations, it would then be difficult to switch over to a central power station installation.

9. CENTRAL POWER PLANT vs. INDIVIDUAL INSTALLATIONS

The comparative costs of central power plant and transmission line, in comparison with that of generators installed separately to serve the needs of the Dominion Government departments are shown as follows:

Central Power Station and Transmission Line (as shown in Statement "D")	\$16,000.00
Cost of 4 separate installations (as shown in Statement "A")	<u>13,500.00</u>
<u>DIFFERENCE</u> --	\$ 2,500.00

From the above, it is evident if a central power plant and transmission line is not built, that 4 separate installations will be necessary at a cost of \$13,500. For \$2500 more a central power plant and transmission line could be erected. With 4 separate generating plants there will be 4 attendants required and this expense, together with the added operating costs, for gasoline, fuel and so on, would be a considerable item of expense annually. The advantage would be in favour of the central power installation at \$16,000 which is recommended.

10. PLAN OF SETTLEMENT

A Plan of Settlement is attached.

11. APPENDICES ATTACHED (ESTIMATES)

<u>STATEMENT "A"</u>	- Capital Investment for four separate Installations -	<u>Total</u>	-	\$13,500.00
<u>STATEMENT "B"</u>	- Estimate for Central Power Station and Transmission Line -	<u>Total</u>	-	\$16,000.00
<u>STATEMENT "C"</u>	- Maintenance and Operation for one year -		-	4,850.00
<u>STATEMENT "D"</u>	- Proportional cost to the several Dominion Government departments for -			
	(a) Capital Cost;			
	(b) Annual Maintenance and Operation cost;			
	(c) Amounts to be provided by Departments for installation and first year of operation (a) plus (b).			

SUMMARY

1. Present or potential future market is too small to interest a public utility company.
2. An opportunity is available under the laws of the Province of Alberta for a local co-operative to install system and sell power under rates approved by Board of Public Utility Commissioners.
3. Present peak load of settlement is 145 K.W. and possible peak load estimated at 226 K.W.
4. If a central power plant and distribution system be installed for settlement to serve both Dominion Government departments and interested private customers, it is likely the Dominion Government would have to subsidize the system which is not recommended.
5. A canvass be made of private customers (other than Dominion Government) to find out if there is enough local interest to form a wholly-owned local co-operative to install and operate the system, to which the several Dominion Government departments would be customers.
6. If Item No. 5 fails, the Dominion Government to pool its resources pro rata to the extent each Department is involved, and on some agreed basis erect a central power plant and distribution system. The cost of maintenance and operation would be on this same basis as agreed on for first capital cost.

7. In the event of Dominion Government proceeding under Item No. 6 (of Summary) (i.e. to build a system for its own needs only); it must refuse to sell electrical power to any private consumer.

8. It would be unwise for the Dominion Government and local agencies to co-operate jointly on the capital cost for a central plant and distribution system, even under a local co-operative, since there is a possibility when replacements and/or extensions were necessary the Dominion Government would by then have become involved and find itself committed for a greater proportionate share of the cost.

9. The time element is a major consideration, and valuable time would be wasted in waiting too long for local citizens to form a local co-operative. There is no reason why a local co-operative could not be formed at any future time, if private citizens wish to organize and take over the system which the Dominion Government has built.

10. Initial cost for Dominion to build a central plant to serve all Dominion Government departments would be --

Generating Plant	\$9,000
Distribution System	<u>7,000</u>
Total	<u>\$16,000</u>

11. If separate installations be made for Indian Affairs (\$1725), Government Telegraphs (\$1725), Experimental Station (\$4550) - Total \$8,000; the inefficient labour and operation costs of three separate units - if capitalized - would make the central plant and distribution system totalling \$16,000 (under Item No. 10) desirable.

12. Generating plant to be on Dominion Government Telegraph property, which is a central location in settlement.

13. Arrangements for maintenance and operation of a system for Dominion Government departments only, to be on a basis to be agreed on by the several Departments concerned.

(Signed) W.J. Johnston

W.J. Johnston
DISTRICT ENGINEER.

NOTE

The letters from Northland Utilities Limited, Mr. Walrath and the Department of Industries and Labour are summarized by Mr. Johnston, and are not circulated.

W.P.C.

STATEMENT "A"

Capital Investment for 4 separate small power units to serve Government Departments.

INDIAN AFFAIRS

Indian Agent's Residence

Plant Cost - 1.5 K.W. Unit, 110 V., Single Phase	\$666.40	
Freight - Edmonton to Fort Vermilion	50.00	
Shelter and installation	<u>1000.00</u>	\$1716.40

Residential Indian School

Plant Cost - 10 K.W., 110/220 V, Single Phase	4000.00	
Freight	150.00	
Shelter and installation	<u>1000.00</u>	5500.00

DEPARTMENT OF TRANSPORT

Government Telegraphs

(Same as Indian Agent's Residence)		1716.40
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DEPARTMENT OF AGRICULTURE

Experimental Farms

Plant Cost 2-5 K.W. Units, 110/220, Single Phase		
at \$1553.20	\$3106.40	
Freight	200.00	
Shelter and installation	<u>1000.00</u>	4306.40
		<u>\$13239.20</u>
Say -		\$13500.00

STATEMENT "B"

ESTIMATE OF COST for purchase and installation of
Central Power Station and Distribution
System for Several Government Agencies

GENERATING PLANT

Land	\$	50.00	
Building 20 x 22 x 8			
Asbestos sheeted in and out			
Metal Shingles		2,000.00	
Generating Units			
2 only 22½ KVA Phase 4 wire			
115-208V 900 RPM units		3,500.00	
Fuel Storage Tanks		1,250.00	
Switchgear and Regulator		500.00	
Transportation and erection and test		1,200.00	
Day tanks, tools, Fire Protection, Pipeline		500.00	\$9,000.00

STATEMENT "B" cont'd

GENERATING PLANT FOR WARD \$9,000.00

DISTRIBUTION SYSTEM

50 Poles with hardware, primary circuit, &c.	\$3,000.00	
Secondary Circuit 6000 ft. #2	800.00	
Transformers	600.00	
Services	400.00	
Meters	900.00	
Street Lighting	250.00	<u>5,950.00</u>
		\$14,950.00
Miscellaneous Overhead & Omissions		<u>850.00</u>
		\$15,800.00
	Say	\$16,000.00

Distribution of Costs proportional to Various Departments based on Estimated Connected Load

Dept	Estimated Load K.W.	Percent	Proportionate Cost
<u>Indian Affairs</u>			
(a) Resident Agent	2)	60	\$9,600.00
(b) Indian Res. School R.C.	10)		
(c) Indian Hospital R.C.	40)		
<u>Transport</u>			
Telegraphs	2	3	480.00
<u>Agriculture</u>			
Experimental Farm	<u>32</u>	<u>37</u>	<u>5,920.00</u>
	86 K.W.	100%	<u>\$16,000.00</u>

STATEMENT "C"

Annual Maintenance and Operation Costs of Central Power Plant and Distributing System.

EXPENSES:

Operating Labour	\$1,200.00
Fuel, 7,500 gallons	2,200.00
Lube Oil	350.00
Maintenance Engines	200.00
Billing, &c.	200.00
Distribution Operation	500.00
Supervision	<u>200.00</u>

\$4,850.00

STATEMENT "C" (cont'd)

Maintenance and Operation Costs proportioned to the Several Government Departments based on percentage of Total Estimated Connected Load

Dept.	Load K.W.	Percentage	Proportioned Cost
<u>Indian Affairs:</u>			
(a) Residence of Agent	2)		
(b) Indian Resident School (R.C.)	10)	60	\$3,000.00
(c) Indian Hospital (RC)	40)		
<u>Transport</u> (Telegraph)	2	3	150.00
<u>Agriculture</u> Experimental Farm	<u>32</u>	<u>37</u>	<u>1,700.00</u>
	86 K.W.	100%	<u><u>\$4,850.00</u></u>

STATEMENT "D"

SUMMARY OF DEPARTMENTAL COSTS
(Central Power Station and Distribution System)

Dept.	(a) Capital Cost (Installation)	(b) Annual Maint. & Operation Cost	(c) Total Cost (a)&(b)	Estimated Annual Yearly Cost
Indian Affairs	\$9600.00	\$3000.00	\$12600.00	\$3000.00
Transport	480.00	150.00	630.00	150.00
Agriculture	<u>5920.00</u>	<u>1700.00</u>	<u>7620.00</u>	<u>1700.00</u>
	<u><u>\$16000.00</u></u>	<u><u>\$4850.00</u></u>	<u><u>\$20850.00</u></u>	<u><u>\$4850.00</u></u>