



IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

A Complaint on the Transmission Capacity within the District of Fort St. James

BEFORE: P. Ostergaard, Chair)
B.L. Clemenhagen, Commissioner) July 4, 2001
K.L. Hall, Commissioner)

O R D E R

WHEREAS:

- A. On September 8, 2000, Apollo Forest Products Ltd. ("Apollo") applied, in accordance with the Commission's Bypass Rate Guidelines, to construct a 69/25 kV substation on its property located near Fort St. James so that it could expand its load and reduce its power cost; and
- B. By letter dated September 13, 2000, the Commission, after reviewing Apollo's application, requested British Columbia Hydro and Power Authority ("B.C. Hydro") to provide the Commission with its incremental cost of service for the Apollo facility. On the same day, the District of Fort St. James ("the District") informed the Commission that it supported Apollo's proposed substation; and
- C. On January 12, 2001, B.C. Hydro filed its incremental cost calculation with the Commission. B.C. Hydro explained that a new transmission line between Fort St. James and Vanderhoof would be required as the existing transmission line would reach its capacity due to Apollo's new load. B.C. Hydro applied its policies on customer contributions to upgrades and extensions to its incremental cost calculation to determine Apollo's share of the cost of the new line; and
- D. By letter dated March 16, 2001, the District informed the Commission that it had previously expressed concerns to B.C. Hydro that economic activity in the area was being restricted because of inadequate capacity to supply power. The District also requested that the Commission clarify whether B.C. Hydro's incremental cost calculation is consistent with its policies. On the same day, Apollo, in its submission to the Commission, provided additional support to the District's concerns; and
- E. By letter dated March 21, 2001, the Nak'azdli Band indicated that without additional electric power it would not be able to expand its business partnerships in the community to create economic opportunities for its members. Concerns with the supply of electricity in the area were also provided to the Commission from the Fort St. James Chamber of Commerce and Visitor Information Centre; and
- F. By letter dated March 27, 2001, the Commission asked B.C. Hydro to explain its policies on how far upstream from a substation a customer is responsible for the cost of reinforcement and upgrades to B.C. Hydro's system as well as to comment on the viability of the alternative to constructing a new line; and
- G. By letter dated April 12, 2001, B.C. Hydro responded to the Commission's letter and maintained that it had correctly applied its extension policies, which allow it to include costs to reinforce and upgrade its system beyond the local distribution substation; and

- H. By letter dated April 18, 2001, the Commission asked parties that had expressed concerns on the supply of power in the Fort St. James area to comment on B.C. Hydro's April 12, 2001 reply; and
- I. By letter dated April 25, 2001, Apollo suggested that if a new transmission line is the most efficient long-term solution to the capacity constraints in the area, then the new line would benefit all customers in the area, and B.C. Hydro should, therefore, upgrade the line at its own cost; and
- J. The District, by letter dated April 27, 2001, questioned whether the existing transmission line was originally designed to B.C. Hydro standards and why the line was capacity constrained given the thermal capacity of the line as described in B.C. Hydro's planning document. The District also indicated that additional load would occur in the next 18 months, as result of the Small Business Forest Enterprise Program administered by the Fort St. James Forest District; and
- K. By letter dated April 30, 2001, Canadian Forest Products Ltd. stated that it was currently evaluating alternatives for expansion of its Fort St. James Sawmill Division; and
- L. During May, correspondence was exchanged among B.C. Hydro, the District, and the Commission on the original construction of the existing line. The District also urged the Commission to order B.C. Hydro to construct a new line in accordance with the provisions of the *Utilities Commission Act*; and
- M. By letter dated May 10, 2001, the Commission informed B.C. Hydro that it was treating the District's concerns on the supply of power in the Fort St. James area as a complaint to the Commission; and
- N. The Commission has considered all of the submissions on the concerns with the power supply within the District.

NOW THEREFORE the Commission orders as follows:

1. Upon receiving confirmation that Apollo's load or other confirmed new load or loads in the Fort St. James area will exceed the capacity of the existing transmission line between Vanderhoof and Fort St. James, B.C. Hydro is to construct at its own cost, the necessary transmission line modifications.
2. Modifications to the Fort St. James substation and facilities downstream of that point will be carried out by B.C. Hydro with customer contributions, where required, in accordance with B.C. Hydro's standard policies and tariffs.
3. Reasons for Decision are attached as Appendix A to this Order.

DATED at the City of Vancouver, in the Province of British Columbia, this *sixth* day of July 2001.

BY ORDER

Original signed by:

Peter Ostergaard
Chair

Attachment

A COMPLAINT ON THE TRANSMISSION CAPACITY WITHIN THE
DISTRICT OF FORT ST. JAMES

REASONS FOR DECISION

1.0 APOLLO'S BYPASS APPLICATION

Apollo Forest Products Ltd. ("Apollo") is currently a distribution system customer of British Columbia Hydro and Power Authority ("B.C. Hydro"). On September 8, 2000, Apollo filed an application (the "Application"), in accordance with the Commission's Bypass Rate Guidelines, to construct a 69/25kV substation on its property located northwest of Fort St. James. A new substation would enable Apollo to reduce its power costs by taking service at the transmission level and expand its operations by constructing a new plant that would increase its existing load by 5 MVA¹. In addition to the substation, Apollo indicated that it would require a line tap from a section of B.C. Hydro's line 60L344 that was previously used to serve Pinchi Mines located north of Fort St. James.

By letter dated September 13, 2000, the Commission asked B.C. Hydro to provide its incremental cost calculation of continuing to serve Apollo on its distribution system and its position on Apollo's bypass proposal. On the same day, the District of Fort St. James ("the District") wrote a letter in support of the Application.

2.0 B.C. HYDRO'S INCREMENTAL COST

After an exchange of information on the design and location of the new substation, B.C. Hydro filed its incremental cost calculation on January 12, 2001. B.C. Hydro explained that a new transmission line between Fort St. James and Vanderhoof would be required, as the existing transmission line would reach its capacity because of Apollo's new load. B.C. Hydro did preliminary estimates of the customer contribution under both the System Extension Test ("SET") for the case in which Apollo remains a distribution service customer and Tariff Supplement ("TS") No. 6 for the case in which it switches to transmission service. Reinforcing the system to meet the projected Apollo load would cost \$10.3 million dollars if Apollo remains a distribution level customer or \$9.2 million dollars if Apollo became a transmission level customer. B.C. Hydro's initial calculations indicated that the Apollo portion of this would be \$5.7 million under the distribution alternative or \$3.6 million under the transmission alternative. Of the \$3.6 million share, \$3.4 million would be required for the upgrade to the transmission line and \$200,000 would be related to re-

¹ The term MVA or MW has been used in these Reasons where others have used them. However, for the purpose of this discussion, the Commission considers them to be equivalent.

energizing an existing 69 kV line and the addition of a tap connection to the mill. B.C. Hydro subsequently stated, in a letter dated April 12, 2001, that line losses would be reduced "...as a result of the parallel line being constructed to serve the new mill" and that the reduction in line losses would likely lower the customer contribution.

By letter dated March 16, 2001, the District requested clarification from the Commission as to whether B.C. Hydro's incremental cost calculation was consistent with its customer contribution policies in its tariff. On the same day, Apollo wrote the Commission expressing concerns over its share of the costs of a new line as determined by B.C. Hydro. Apollo argued that it is unfair for it or any other business to be charged a substantial cost for a new transmission line that would serve all of the customers in the area.

In response to the issues raised by Apollo and the District, the Commission, by letter dated March 27, 2001, asked B.C. Hydro to explain its policies on how far upstream from a substation a customer is responsible for the cost of reinforcement to B.C. Hydro's system.

By letter dated April 12, 2001, B.C. Hydro stated that it believed that it had applied the policies in its tariffs correctly. Furthermore, it stated its policies allow it to charge its customers costs of reinforcing its system beyond the local substation. B.C. Hydro explained that its policies on customer contributions for system extension and upgrades, as described in its Electric Tariff and in TS No. 6 for industrial customers, are consistent with the general principles in the Commission's Utility System Extension Test Guidelines ("Guidelines"). B.C. Hydro also stated that the Guidelines require that in cases where incremental costs of connection and system extension are greater than the incremental revenues from the extension, the customer who benefits from the connection is required to make a contribution that offsets the difference between the incremental cost and the revenue.

By letter dated April 19, 2001, the Commission asked B.C. Hydro to explain the load growth assumptions used in its incremental cost calculation. That letter noted that the system extension test contained in B.C. Hydro's tariffs allows for the consideration of new load in determining a customer's contribution to an extension when there is reasonable certainty of future customer additions. In a letter dated May 1, 2001, B.C. Hydro stated that reasonable certainty would have to take the form of known customers applying for service and, therefore, no other load in addition to Apollo's load was used in its incremental cost calculation. B.C. Hydro further stated that its calculation of Apollo's share of the cost of the new line did not include any new revenue from expected load in addition to Apollo's. B.C. Hydro noted that the provisions within TS No.6 require a recalculation of Apollo's customer contribution to take into account additional revenue if new customers are connected and make use of the line over the next five years.

3.0 POTENTIAL FOR ADDITIONAL LOAD

The District's letter of March 16th indicated that economic development is being restricted because of inadequate capacity to supply power in the area. As an example, the District stated that new operations, such as Spruceland Millworks, had decided not to locate in the Fort St. James area partly because it was concerned that there was an inadequate electricity supply from B.C. Hydro. The District stated that it believes that B.C. Hydro has a basic obligation to ensure that communities served by B.C. Hydro have a sufficient margin of capacity to accommodate reasonable economic growth.

A letter dated December 30, 1999 from the District to B.C. Hydro was attached to the District's March 16th letter. The earlier letter indicated that the District had previously informed B.C. Hydro that within the next 18 months there would be two new mills opening, and further that service expansion would be required on local Indian Reserves. It also indicated that the potential existed for a third mill in the area to reopen and another small value added mill to be constructed in the area. The District also stated that the increase in economic activity and employment was expected to lead to the addition of 100 to 150 houses in the next two to three years. Notes (attached to Apollo's March 16, 2001 letter) of a June 13, 2000 meeting between the District and B.C. Hydro indicated that 3 small mills would create a load of about 1.5 MW and 150 houses would create a load of about 0.5 MW. Using these assumptions additional load of more than 2 MW is possible.

In a letter to the Commission dated April 27, 2001, the District stated that it did not believe that B.C. Hydro's demand forecasts for the region had considered the additional loads that would result from the Small Business Forest Enterprise program administered by the Fort St. James Forest District. The District stated that an additional 4.0 MVA of electrical load is scheduled to be connected to the B.C. Hydro grid over the next 18 months. This was supported by letters from the FSJ All Nations Forest Corporation regarding commitments made under two recently issued Forest Licences, and from Apollo with respect to plans for new construction or expansion of affiliated value added mills.

By letter dated April 30, 2001, Canadian Forest Products Ltd. ("Canfor") indicated that a number of alternatives were being considered for an expansion of its sawmill in Fort St. James, and a decision on future expansion would occur in the next two or three years. Canfor advised that it expected its current level of energy consumption of approximately 2,300 MWh per month would increase by 20 to 35 percent, depending on the expansion alternative. Current average monthly demand is approximately 7.0 MVA. Assuming a similar increase in demand, the additional load would be approximately 1.4 MVA to 2.5 MVA.

Based on the above estimates, the potential additional load in the area, including new sawmill activity and related residential load but excluding the proposed Apollo load, ranges from 7.4 to 8.5 MVA. **In the Commission's view, even allowing for some of the planned new activity not to materialize and for possible**

duplication between estimates, it is reasonable to assume load growth in the order of 5 MVA in the foreseeable future, in addition to the proposed Apollo load.

4.0 CAPACITY CONCERNS WITH LINE 60L344

The District's March 16th letter also included a copy of B.C. Hydro's June 1999 Regional Planning Overview. The Overview indicates that line 60L344 is 70 km in length starting from Tachick substation, and supplies a peak load of 20 MVA in the Fort St. James area. It also indicates that the voltage drop on the line is about 15 percent and, therefore, supply could be considered as a typical voltage-limited system. B.C. Hydro's April 12th letter of comment to the Commission indicates that the line is limited to supplying a 25 MW load and after that would need to be rebuilt.

The District, in letters of April 27, and May 7, 2001, questioned if line 60L344 had been constructed to appropriate standards and if the line met current standards. By letter dated May 10, 2001, the Commission informed B.C. Hydro that it was treating the matters raised by the District as a complaint to the Commission. The Commission also requested B.C. Hydro to confirm the District's information that line 60L344 was constructed using three different conductors on each segment of the line.

By letter dated May 18, 2001, B.C. Hydro confirmed that the line had undergone a number of modifications since it was originally constructed in 1959 by the B.C. Power Commission and utilized several types of conductor. B.C. Hydro has stated that the line has been well maintained, it met the standards of the day, and it continues to meet B.C. Hydro and Canadian Standards Association standards.

The District, in a letter dated May 31, 2001, responded to B.C. Hydro's May 18, 2001 letter, stating that it understood that design standards of the Distribution Group of the B.C. Power Commission, which was responsible for the design and installation of the line between Vanderhoof and Fort St. James in 1959, were not as stringent as those of the Transmission Group. The District also indicated that the conductors used on an additional section of line 60L344, which was constructed to serve Pinchi Mines eight years later, provided further evidence that the line was not properly designed to transmission standards from the beginning. The District further commented that recent discussions with B.C. Hydro senior regional staff were not successful on resolving the capacity concerns. The District urged the Commission use the provisions within the *Utilities Commission Act* to order B.C. Hydro to construct a new 69 kV line to Fort St. James.

The Commission notes that design and construction standards have evolved from the original date of the line 60L344 construction. However, as long as an existing line continues to be safe and reliable, the Commission does not agree that it should be replaced simply to meet the current standards in place.

5.0 ALTERNATIVES TO CONSTRUCTING A NEW TRANSMISSION LINE

B.C. Hydro noted in its June 1999 Regional Planning Overview that adding series-compensation to the line would increase the capacity of the existing line to 25 MVA at a cost between \$400,000 to \$600,000. The District, by letter of March 16, 2001 to the Commission, stated that while series compensation might provide a short-term solution to accommodate the Apollo expansion, it would not provide a satisfactory long-term solution for the District. Apollo indicated in its March 16th letter to the Commission that it preferred adding series-compensation to increase the capacity of the line rather than constructing a new line.

B.C. Hydro, in its letter of April 12, 2001, concluded that alternatives to constructing a new line were not viable because those alternatives would not increase the capacity of the transmission line to meet the total line load into the Fort St. James District, including the additional Apollo load. By letter dated April 25, 2001, Apollo agreed that the most efficient upgrade to the Fort. St. James area should be done on a long-term planning basis. In Apollo's view a new line would benefit all customers in the area and, therefore, B.C. Hydro should pay for the new line at its own cost.

On May 1, 2001, B.C. Hydro, in response to an information request from the Commission, provided additional information on the load in the area to support its conclusion. B.C. Hydro explained that Apollo's expected load of 5.0 MVA combined with the load for Fort St. James of 15.5 MVA and Takla Forest Product's load of 7.0 MVA, which is located northeast of Apollo's operations, would increase the load on the line to 27.5 MVA in 2001. This load would exceed the capacity of 25 MVA that could be achieved by adding series-compensation to the line. Furthermore, it had not considered upgrading the line as it would not be possible to take the line out service and continue to serve the Fort St. James area.

6.0 COMMISSION DETERMINATIONS

The issue of the adequacy of B.C. Hydro's service to the District of Fort St. James has evolved from the Bypass Rate Application of Apollo. The capacity of the line is currently adequate to serve existing load, but it cannot adequately serve the projected load if the Apollo mill came on line. B.C. Hydro has suggested in its letter dated April 12, 2001 that without the expanded Apollo load, the Fort St. James substation would be adequate until 2008 and the transmission line would be adequate to serve the region until 2021.

By letter dated March 16, 2001, the District complained to the Commission that this transmission line lacks adequate capacity to serve anticipated incremental loads. Others as well as the District have expressed concerns that the limited capacity of the line and the customer cost of upgrading the line are preventing economic development of the region. The District and the Fort St. James Chamber of Commerce have both stated that one potential new industrial plant located elsewhere partly because it believed there was an

inadequate supply of electrical energy available from B.C. Hydro. In the view of these parties, B.C. Hydro should increase the capacity to the area at its cost.

B.C. Hydro has taken the position that it is acting in conformance to its existing tariffs. In its April 12, 2001 letter, B.C. Hydro states that it must follow the Facilities Agreement contained in TS No. 6 when determining the costs to be charged to a new load connecting to the transmission system. TS No. 6 specifies that additions or alterations to an existing transmission connection will be considered a system reinforcement when that transmission connection supplies one or more other customers whose combined power demand exceeds 5 percent of the capacity of the connection. Unless the incremental load exceeds 150 MVA, system reinforcements shall not include additions or alterations to generation plant and associated transmission lines at 500 kV and over. In calculating the customer contribution, the incremental revenue included by B.C. Hydro is based on the estimated incremental load in the first year of operations. If subsequent customers use the system reinforcement in the first five years of operation, B.C. Hydro will recalculate the original customer's contribution based on the combined load and refund the appropriate amount to the first customer. For determining the costs to be charged to a new load connecting to the distribution system, B.C. Hydro follows the SET. The SET considers the revenue of the connected load of applicants that are connecting to the extension. The SET also states that "Where there is reasonable certainty of future Customer additions, B.C. Hydro may include the projected electricity revenues and costs of such Customers in the SET".

B.C. Hydro pointed out in its April 12, 2001 letter that it had calculated the incremental cost based only on the load increase forecast by Apollo and that it was aware of potential plans for expansion of the Canfor facility in Fort St. James. The Commission notes that B.C. Hydro's SET, which would apply if system reinforcement was required due to additional load on the distribution system, states that B.C. Hydro may consider other potential revenue if there is a reasonable certainty that it will occur. B.C. Hydro stated that if Canfor's load was a minimum of 2.8 MVA and occurred within five years of the Apollo expansion, the customer contributions required of Apollo under both the SET and TS No. 6 would be refunded.

As noted in Section 3.0, Canfor wrote to the Commission on April 30, 2001 and advised the Commission of its potential expansion alternatives. Other parties also advised of expected additional load. Based on the information provided by the parties, the Commission has determined that a reasonable estimate of new load in the foreseeable future is 5 MVA, in addition to the proposed Apollo load. In the Commission's view, the likely additional load is almost double the amount that B.C. Hydro has stated would allow the reinforcements to be constructed without a customer contribution. It appears likely that if B.C. Hydro reinforces the transmission line at its own expense, when required by new load, sufficient additional revenues will subsequently occur to offset the cost of the line. Consequently, the Commission views the risk to other ratepayers or the shareholder in this instance to be small.

Therefore, the Commission directs B.C. Hydro to construct, at its own cost, the necessary transmission line modifications between Vanderhoof and Fort St. James, upon receiving confirmation that Apollo's load or other confirmed new load or loads in the Fort St. James area will exceed the capacity of the existing transmission line. Modifications to the Fort St. James substation and facilities downstream of that point will be carried out by B.C. Hydro with customer contributions, where required, in accordance with B.C. Hydro's standard policies and tariffs. Should there be a dispute concerning the need for, the timing of, or the extent of the modifications to the line the Commission will, upon receipt of a complaint, convene a hearing under Sections 30, 34 and/or 35 of the *Utilities Commission Act*.