



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

and

An Application by Aquila Networks Canada (British Columbia) Ltd.
for Approval of the Final Routing, Cost Estimate and Agreements
for its Kootenay 230 kV System Development Project

BEFORE: P. Ostergaard, Chair)
K.L. Hall, Commissioner) June 28, 2002

O R D E R

WHEREAS:

- A. On November 12, 1999, West Kootenay Power Ltd., subsequently known as UtiliCorp Networks Canada (British Columbia) Ltd. and now known as Aquila Networks Canada (British Columbia) Ltd. ("Aquila") applied to the Commission for a Certificate of Public Convenience and Necessity ("CPCN") for its Kootenay 230 kV System Development Project ("the Kootenay 230 kV Project") pursuant to Section 45(1) of the Utilities Commission Act; and
- B. On June 5, 2000, following a public hearing, the Commission approved CPCN Order No. C-10-00, issued its Decision, and required Aquila to submit to the Commission for final approval its final cost estimates and routing for the Kootenay 230 kV Project; and
- C. On January 28, 2002, Aquila filed with the Commission its Final Project Routing, Schedule and Budget Estimates Report ("the Report"). On February 5, 2002, the Commission established a regulatory schedule for reviewing the Report including the holding of a public workshop in the service area on February 19, 2002; and
- D. Between February and May 2002, Intervenor and Interested Parties made information requests which were responded to by Aquila, and filed submissions with the Commission regarding the Kootenay 230 kV Project; and
- E. Aquila responded to the submissions on March 25, 2002 and filed further information related to the Kootenay 230 kV Project on May 3 and June 3, 2002; and

- F. On May 1, 2002, the Regional District of Central Kootenay responded to a Commission Information Request regarding its resolution to make a financial contribution to support routing the 230 kV line outside of the residential areas of Ootischenia and Blueberry; and
- G. On May 14, 2002, Aquila filed for Commission approval the Brilliant Terminal Station Facilities Interconnection and Investment Agreement (“BTS FIIA”) with Columbia Power Corporation, Columbia Basin Trust and affiliated companies dated January 31, 2002; and
- H. The Commission has reviewed the submissions and finds that a Decision on the final routing of the Kootenay 230 kV Project and the BTS FIIA is required.

NOW THEREFORE the Commission approves as follows:

1. The Commission approves for Aquila the final routing for the Kootenay 230 kV Project in accordance with the Reasons for Decision issued as Appendix A to this Order.
2. The Commission approves for Aquila the BTS FIIA in accordance with the Reasons for Decision issued as Appendix A to this Order.
3. Aquila is to file monthly progress reports and a final report on the Kootenay 230 kV Project in a format developed in consultation with Commission staff.

DATED at the City of Vancouver, in the Province of British Columbia, this 28th day of June 2002.

BY ORDER

Original signed by:

Peter Ostergaard
Chair

Attachment

AQUILA NETWORKS CANADA (BRITISH COLUMBIA) LTD.
Final Project Routing, Schedule and Budget Estimates Report
for Kootenay 230 kV System Development Project

REASONS FOR DECISION

1.0 BACKGROUND

The Commission's June 5, 2000, Decision and Order No. C-10-00 granted a Certificate of Public Convenience and Necessity ("CPCN") to West Kootenay Power Ltd. [renamed UtiliCorp Networks Canada (British Columbia) Ltd. and now Aquila Networks Canada (British Columbia) Ltd. Hereinafter referred to as "Aquila"] to replace the 63 kV system of transmission lines, substations, and switchyards between South Slocan and Trail with a 230 kV transmission system (the "Project"). The Decision and Order followed a public hearing and submissions, which concluded on April 14, 2000.

The Decision approved the construction of the K3 route option between Brilliant and Warfield subject to filing of final line alignment, right of way acquisition plans and updated cost estimates. The K3 route generally follows the existing 63 kV transmission corridor and replaces six 63 kV lines with one 230 kV line. Two of the eight existing 63 kV lines would be retained from Brilliant to Blueberry to supply local loads. The Order also required that Aquila submit for final approval all agreements and cost estimates of the approved facilities. In its Decision, the Commission determined that the risk to public and worker safety of the status quo dictated that the 63 kV "river lines" and some substations must be replaced, and that the K3 route between Brilliant and Warfield provided the lowest cost route for all ratepayers, greatly reduced the impact on the public compared to existing lines, and minimized impacts on wildlife and forest resources.

On May 7, 2001, the Ootischenia Water and Land Stewardship Committee Action Group ("OWLSCAG") filed a complaint with the Commission regarding alleged adverse health effects on residents of Ootischenia, and requested the Commission to order Aquila to cease and desist work on the 230 kV transmission line through the rural residential area of Ootischenia. Following a detailed review of the many submissions and technical evidence, the Commission denied this complaint on October 25, 2001 by Letter No. L-31-01 and appended Reasons for Decision. The Reasons for Decision reiterated Aquila's requirement to file final costs and route selection for Commission approval and also required Aquila to address route options and impacts on residents, including electric and magnetic field ("EMF") exposure levels, for various line positions.

Aquila filed its Final Project Routing, Schedule, and Budget Estimates Report (the “Report”) on January 28, 2002. On February 5, 2002, the Commission established the following schedule for reviewing the Report:

- Commission staff to hold a Workshop in Castlegar on February 19, 2002;
- Information requests to Aquila by February 26, 2002;
- Aquila to respond to those requests by March 8, 2002;
- Interested parties could comment to the Commission by March 15, 2002; and
- Aquila to respond to those comments on March 25, 2002.

Submissions to the Commission from interested parties included a resolution from the Regional District of Central Kootenay (“Regional District”) to hold a referendum on a proposed bylaw to borrow \$1,855,000 for the purpose of providing capital financing toward the cost of relocating the 230 kV transmission line in the vicinity of Ootischenia but outside of the community. In addition, concerns were raised by other interested parties that Aquila had not reached agreement with Teck Cominco to remove Teck Cominco’s three 63 kV lines from the present right of way. As a result of these submissions, on April 5, 2002 the Commission sent an information request to the Regional District to clarify details of the proposed referendum and methods of raising the financial contribution.

In its May 1, 2002 response, the Regional District:

- stated it was preparing a similar bylaw to borrow \$250,000 for the purpose of providing capital financing toward the cost of locating the 230 kV line in the vicinity of Blueberry/Fairview but outside of the community;
- explained that any Ootischenia relocation costs over \$1,855,000 would be Aquila’s responsibility;
- noted that its powers are limited to offering a capital financing contribution should the Commission and Aquila agree to relocate the line;
- calculated that, if approved by referendum and the Inspector of Municipalities, the Ootischenia 230 kV Transmission Line Relocation Contribution Service Establishment Bylaw No. 1534 would require that 60 percent of the \$153,000 annual property value tax increment would be paid by Aquila and the Brilliant Power Funding Corporation. This is attributable to the presence of the Brilliant Dam and transmission lines in the geographic area that would be subject to the new tax, and the higher tax rate paid by utilities; and

requested an indication from the Commission and Aquila as to whether its proposal would be looked upon favourably, in advance of the proposed referendum, targeted for mid July 2002.

Also on April 5, 2002, the Commission requested Aquila to file a Definitive Agreement with Teck Cominco, in part because the issue of the removal of the three Teck Cominco power lines from the K3 corridor was of considerable interest. Aquila was also asked to provide approvals from the Ministry of Transportation (MOT) and the Canadian Pacific Railway (“CPR”) for Aquila’s routing proposals. Aquila’s May 3, 2002 response to the Commission requested an extension for filing the Teck Cominco Agreement. Aquila also informed the Commission that the CPR will not allow Aquila to use the right of way near Fairview if the 230 kV line was sited between the railway track and the highway and, therefore, Aquila would require more time to review other route options.

On May 9, 2002, the MOT informed the Commission that it was declining Aquila’s application to use the Highway 22 right of way, but was working with Aquila to an amicable resolution.

The Commission, by letter dated May 15, 2002, extended the date for filing the Teck Cominco Agreement to June 3, 2002 and, if Aquila was unable to do so, requested it to file an economic analysis for alternative project configurations. Aquila was also requested to file a report on the Blueberry-Fairview segment, and a report on the changes to the routing caused by MOT’s rejection of Aquila’s application to use the Highway 22 right of way. Aquila replied to the Commission’s requests on June 3, 2002.

2.0 REPORT ISSUES AND COMMISSION FINDINGS

2.1 Cost Estimates

The Decision of June 5, 2000 approved facilities with an estimated cost of \$99.341 million, with approximately \$11 million estimated to be paid for by other transmission owners. The Commission recognized there was considerable potential for variations in the share of costs to be borne by Aquila, as agreements for the sharing of costs were not in place. In addition, until Aquila provided final estimates for all components of the final system configuration, there would also be uncertainty in the base cost estimate. The Decision (p. 60) stated:

“Although these estimates are based on preliminary data and contain a relatively high level of uncertainty, the Commission has determined that the items which it has approved are necessary for safe and reliable service to residents of the Kootenays. This Project is a necessary refurbishment of a transmission system that has reached the end of its physical life, and, therefore, approval cannot be delayed until final costs and cost sharing arrangements are complete.”

Aquila proposed a 10 percent “Cost Collar” mechanism for the amount to be included in the utility’s rate base. The collar would have applied to Aquila’s deemed cost component, but the deemed cost would be adjusted for eight critical costs, such as environmental remediation, land acquisition and permitting costs, right of way length, and South Slovan substation design. Increases in these and other costs would result in one-to-one increases to the cost upon which the collar was to be based. While the Commission has supported cost control features in other major project applications, the Commission did not approve the cost collar for this project because there were not other competitive options and a detailed review of the base costs and risks had not been done. In addition, the eight cost categories which could be used to change the cost collar severely weakened the possible effectiveness of the cost collar.

The estimated final cost of the total project (including the costs to other transmission owners) as stated in the Report is currently \$119.55 million. The estimate for Aquila facilities is \$109.77 million. Aquila spent \$13.01 million to the end of 2001, and had negotiated or committed a further \$48.29 million, which together amount to 51 percent of the estimated final total project cost.

Aquila stated the difference between the estimates in the Decision and the current final cost estimate is a matter of estimating accuracy rather than cost overrun. In its response to Commission staff information requests, the utility explained the more significant increases as follows:

Phase 2 Costs - Environmental, Permitting, and Land (Increase of \$4.75 million or 295 percent, to \$6.35 million)

The forecast increase was due to higher environmental and land costs (\$1.95 million), an environmental compensation program (\$1.25 million), increased stakeholder negotiations and public consultation (\$1.15 million) and added administration costs (\$400,000).

Phase 3 - Implementation (Increase of \$8.96 million or 13 percent, to \$78.38 million)

The forecast increase was mainly due to additional site development costs at Brilliant and Warfield, an increase in switchyard construction costs and the requirements of other transmission owners (\$7.94 million in total). Transmission line costs were higher by \$980,000, while upstream switchyard rehabilitation was expected to be down by \$790,000. Program management costs increased by \$760,000, and owner representative costs increased by \$950,000, as time limitations on Aquila senior management caused Aquila to engage external management resources. Aquila administration and legal costs decreased by \$890,000.

Phase 4 - Decommissioning (Increase of \$5.42 million or 111 percent, to \$10.30 million)

The largest factor in the forecast increase was \$2.32 million of removal and disposal costs related to wood preservatives in the old poles. Additional distribution rebuilds in South Slokan and Ootischenia were expected to cost \$1.50 million. Resolution of land issues was expected to add \$500,000 while program management and public consultation would add \$1.1 million.

OWLSCAG noted that the forecast cost increase of approximately 20 percent is greater than the ± 10 percent range of accuracy in Aquila's initial submission, and stated this shows incomplete and hasty planning prior to submission. OWLSCAG suggested that Teck Cominco should share the cost of decommissioning the old lines, and that this contribution would offset the cost to route the line around Ootischenia and Blueberry.

The British Columbia Public Interest Advocacy Centre ("BCPIAC") expressed concern that the estimated final cost exceeds the original estimate by 22.7 percent, and found no material distinction between a "cost overrun" and "a matter of estimating accuracy". BCPIAC anticipated that the final cost figures will be examined at Aquila annual reviews.

Similar letters were received from approximately 100 residents, primarily from Blueberry. The letters expressed concerns about the ongoing existence of the three Teck Cominco lines, and discussed other route options. In particular, these residents proposed that cost overruns in excess of 10 percent should be borne by Aquila shareholders and that the difference of about \$10 million be directed to be applied to selecting routes through Ootischenia and Blueberry-Fairview that removed power lines from residential neighborhoods.

Commission Findings

The Commission is very concerned about the increase in estimated cost. In addition, most of the agreements related to cost sharing are not yet finalized, and it is expected that Aquila's share for items such as switchyards and decommissioning may increase Aquila costs relative to the cost sharing that was anticipated in the Decision .

The Commission considers that uncertain cost estimates, while undesirable, are a risk that may need to be accepted in order to proceed in a timely fashion with necessary system improvements. On the other hand, cost overruns that result from a utility's inability to prudently manage a project should not be charged to

customers. The Commission is concerned about the comparative lack of direct involvement by senior Aquila staff. Aquila's General Manager, Trail Operations heads the Project Organization Chart, but presumably he has significant other responsibilities as well. He assumed control of the project only in the past year and the Commission understands he will be leaving Aquila in June. The Commission has no particular reason to question the ability of the consultants hired by Aquila for the project, but considers that Aquila in-house staff should be able to provide services at lower cost, and would be more focused on the responsibility of the Utility to control cost.

The projected overrun by 295 percent in "Environmental, Permitting and Land" costs illustrates this concern. These are areas where unexpected issues raised by the public, government agencies and other stakeholders can require considerable work to resolve. Nevertheless, Aquila will need to show that the amount of additional work was managed prudently and that the resources to do the work were sourced in the most cost-effective manner. The explanations to date for these and other cost increases identify where the increases occurred, but do not explain why the increases are justified. Aquila will need to justify the actual cost of the project relative to the cost estimate in the Decision and the expected ± 10 percent accuracy of that estimate.

The Commission considers that the Project continues to be necessary for safe and reliable service to customers, despite the increase in the cost estimate. Aquila will be expected to demonstrate that it has managed the project effectively, and that the actual costs of the Project are prudent before they are included in rate base. The Commission directs Aquila to immediately start filing monthly reports on Project progress, costs, oversight and agreements with other transmission owners, so that the Commission can more closely follow developments.

2.2 Agreements with Other Parties

2.2.1 Brilliant Terminal Station Facilities Interconnection and Investment Agreement ("BTS FIIA")

In its Decision, the Commission denied Aquila's request to build a 230 kV transmission line from Warfield to Waneta. Without the 230 kV connection to Waneta, the Commission believed that a substation at Brilliant that interconnected the Aquila transmission system with the Columbia Power Corporation/Columbia Basin Trust ("CPC/CBT") system was the preferred alternative to an isolated substation used only for Aquila's benefit. The interconnected Brilliant Substation would bring benefits to both CPC/CBT and Aquila.

CPC/GBT ownership of the Brilliant Terminal Station (“BTS”) was one scenario that was considered in the Hearing and it was anticipated that, as Crown Corporations, CPC/GBT could provide lower cost financing. The Decision directed Aquila to resume negotiations with CPC/GBT to determine the design and ownership arrangements of a larger Brilliant substation to accommodate the needs of all parties at reasonable cost to Aquila ratepayers, but also authorized Aquila to construct its own substation at Brilliant, if necessary.

On May 14, 2002, Aquila filed the BTS FIA dated January 31, 2002 for Commission approval. The BTS will be owned by a joint venture of CPC and GBT Power Corporation and operated by Aquila under arrangements that are similar to those for the Brilliant generating plant under the Brilliant Power Purchase Agreement (“BPPA”). The BTS will connect with the Aquila and CPC/GBT 230 kV transmission systems. The agreement is in effect until 2056 unless terminated earlier by Aquila. Aquila will pay for the use of the BTS as if the costs were incurred as Sustaining Capital under the BPPA, except that costs related to the Brilliant Expansion Project will generally be excluded. Aquila will also reimburse CPC/GBT for certain line losses and Regional Transmission Organization and other charges to the extent they are incremental to CPC/GBT costs that would have occurred if the interconnection had not taken place. The estimated capital cost for the BTS has increased from \$16.46 million in the Decision to \$24.4 million. The new estimate includes \$2.1 million of contingency, \$800,000 of AFUDC and \$2.42 million of CPC/GBT costs that are related to the BTS project.

By letter dated May 22, 2002, counsel for Teck Cominco advised the Commission that it may be necessary to amend the BTS FIA to accommodate the agreement related to the Aquila 230 kV Project that is being negotiated between Aquila and Teck Cominco.

Commission Findings

The Commission anticipates that the negotiated BTS FIA will provide the desired interconnection with the CPC/GBT system. Payments by Aquila will be calculated using the methodology in the BPPA, which was approved after review in a public hearing. The methodology continues to be reasonable. The Commission is very concerned about the increase in the estimated cost of the BTS, and the prudence of the actual expenditures will be reviewed following completion of the 230 kV Project.

The Commission does not consider it necessary to delay its response to the request for approval of the BTS FIA pending the completion of negotiations with Teck Cominco, as amendments to the agreement

will be reviewed when they are filed. **The Commission considers that the BTS FIIA reasonably fulfills the directive in the Decision, and approves the BTS FIIA subject to review and approval of the actual costs for the station.** Parties to the agreement require that it be kept confidential. The Commission will hold the agreement confidential unless a third party demonstrates an overriding reason for its release.

2.2.2 Aquila Agreement with Teck Cominco for Facilities Sharing

On June 3, 2002, Aquila responded to the Commission's request for filing an agreement with Teck Cominco for joint use of facilities by stating that, to date, the parties had not been able to come to a definitive agreement, although negotiations thus far had produced slow but steady progress. Aquila also stated that it was certain that an agreement will be concluded in due course and that additional analysis of project configuration alternatives would be an unnecessary cost at this time.

The Commission notes that the Facilities Interconnection and Investment Agreement with CPC/CBT took more time to complete than expected and the agreement with Teck Cominco is also likely to be complex. Teck Cominco has informed Commission staff that it is committed to conclude an agreement for facilities sharing which benefits all parties.

In view of these reassurances from both Aquila and Teck Cominco, the Commission determines that the Project should proceed and that an economic analysis of alternative project configurations is not required at this time.

2.2.3 Aquila Agreement with B.C. Hydro for Kootenay Canal Connection

Aquila stated that tentative agreements with B.C. Hydro are in place and negotiations are continuing to solve final financial arrangements.

The Commission encourages Aquila and B.C. Hydro to complete negotiations, although the lack of an agreement at this time does not jeopardize the Project. Should an impasse be reached in negotiations the Commission may mediate or otherwise resolve the matter.

2.3 Routing Issues

Three siting and routing proposals received further evaluation and public input following issuance of the Commission's June 5, 2000 Decision. They were the location of the South Slocan Switchyard and the detailed routing of the 230 kV transmission line through Ootisohenia and Blueberry-Fairview.

2.3.1 South Slocan Switchyard

Aquila's CPCN application stated that the South Slocan Switchyard needed to be rebuilt and that its preferred option was to rebuild the switchyard in its present location. Commission Order No. C-10-00 approved the modification and upgrade of the South Slocan Switchyard as one of the components of the Project. During the course of engineering reviews, Aquila announced it was considering alternative sites for the Switchyard. This prompted a number of complaints from adjacent residents. Aquila assured the Commission it was conducting evaluations of several sites with a public process to allow input from residents and Aquila would seek Commission approval of any site chosen. Subsequently, Aquila confirmed that it will rebuild the switchyard at its present location.

2.3.2 Ootisohenia

Local community groups such as OWLSCAG, representatives from the Regional District, the Ootisohenia Improvement District and a number of individuals continued to petition the Commission to relocate the transmission line route outside of Ootisohenia. As a result of this community interest, the Commission directed Aquila to examine other routing alternatives. The routes examined by Aquila are described below and shown on the map provided in Attachment A:

Alternatives A and B use of the present right of way through Ootisohenia.

Alternatives A and B follows the eastern ROW (2 circuit corridor from the Brilliant Terminal Station) to Highway 3.

South of Highway 3, under Alternative A the new line would be built over the line 7 position which is the second circuit in from the eastern edge of the corridor.

Under Alternative B south of Highway 3 the new line would be built over the line 8 position, which is the eastern most of the eight circuits in the corridor.

Alternative C - Alternate Route within the Community of Ootischenia

The line would follow the existing corridor through the Castlegar Golf Course South of the golf course the line would be built on a new corridor on the eastern edge of Ootischenia, at the foot of a steep mountain slope. It would cross Highway 3 and rejoin the existing corridor near Waterloo Eddy.

Alternative D – Alternate Backcountry Route outside the Existing Corridor

The line would follow the routing of the Kootenay Canal-Brilliant line for a short distance east of Brilliant Terminal Station, then turn south and follow a high-elevation routing to the east of the mountain ridge outside of community to a point northeast of the Columbia River crossing at Blueberry. The line would then turn southwest and cross the Columbia River at roughly the same crossing location as in Alternatives A and B.

A variant of Alternative C was proposed by some residents which would have the line essentially follow the bench top behind Ootischenia, crossing higher on the face of the steep mountain slope behind Ootischenia and exiting on the south side of Ootischenia. This was referred to as Alternative C1. This variant would present extreme construction and maintenance problems, and would create a clearly visible scar on the landscape, and was not considered further.

In order to advance their preferred option, the Regional District adopted two resolutions, which they hoped to take to a referendum in mid-July. One resolution required staff to prepare a bylaw to restrict the development of power transmission lines larger than 63 kV in agricultural and residential areas. The other resolution was for a Service Establishment Bylaw within a portion of Electoral Area J as well as a Loan Authorization Bylaw in the amount of \$1,850,000 for the purpose of providing capital financing toward the cost of locating the 230 kV transmission line outside the community of Ootischenia. In their May 1, 2002 response to the Commission, the Regional District advised that an additional resolution supported borrowing \$250,000 toward the cost of relocating the transmission line outside Blueberry-Fairview. Costs for the capital contributions proposed for the Ootischenia relocation would be recovered by means of a property value tax assessed on properties located within an area defined as the “Ootischenia 230 kV Transmission Line Relocation Contribution Service Area”. This would include the Brilliant Generating Station and other properties owned by CPC/CBT and Aquila for transmission. This would result in CPC/CBT and Aquila being responsible for 60 percent of the annual requisition of \$153,000. Under the terms of the Brilliant Power Purchase Agreement, Aquila ratepayers would be responsible for these costs.

The Commission has received many letters from concerned residents and businesses expressing support for various options. The RDCK, many residents of Ootischnia, and OWLSCAG support either Alternative D or C in order to reduce or avoid the impact of transmission lines on their community. The Ootischnia Improvement District supported Alternative D because it believes it completely moves the power lines out of the valley; however, they opposed Alternative C because of impacts this route would have on water licenses they hold in this area. The Union of the Spiritual Communities of Christ endorsed the Ootischnia Improvement District's submission, however, they also requested the Commission to delay any decision until after the results of the proposed referendum.

Selkirk College objected to Alternative D because it would mean that more area would be taken out of their woodlot licence, thereby reducing their Annual Allowable Cut. In addition, the College noted that for portions of a new Alternative D transmission line, using the existing right of ways through their woodlot, the original environmental mitigation measures taken would be destroyed or compromised. Selkirk College was also concerned with wildlife and water impacts and the visual scar that would be worsened by an additional line exiting from the Brilliant Substation up the hill. Nelson Hydro expressed concern over increased costs to ratepayers of Alternative D and the effects that a delay in construction would have on reliability. ATCO objected to Alternative D on the basis that this would negatively impact its timber resources and because it has already taken the brunt of multiple energy corridors through its property. ATCO also objected to Alternative C on the basis that it would compromise aesthetics, water and the environment in general. ATCO supported an option which would utilize the present alignment near the airport. A supporter of the Friends and Parks and Trails Society expressed concern that options which moved the corridors out of the valley would have adverse visual impacts on the valley.

Commission Findings

The Commission recognizes that there are competing benefits and costs for the various routes and has constructed the following multi-attributes analysis chart for the three alternatives to assist it in assessing the three Ootischnia route options.

OOTISCHENIA ALTERNATE ROUTE EVALUATION

MULTIPLE ATTRIBUTES ANALYSIS: ROUTE ALTERNATIVES

<u>ATTRIBUTES</u>	<u>ROUTE ALTERNATIVE A PRESENT LOCATION</u>	<u>ROUTE ALTERNATIVE C LOW LEVEL BYPASS</u>	<u>ROUTE ALTERNATIVE D HIGH LEVEL BYPASS</u>
<u>Impacts on Residents/Property Owners</u>			
Land use in Ootischenia	May allow Cominco to utilize a portion of ROW not needed for 3 remaining transmission lines (T/Ls)	North of Hwy 3 part of present east ROW will become available for Cominco's use May allow Cominco to a utilize a portion of ROW not needed for 2 remaining lines South of Hwy 3	North of Hwy 3 present east ROW will become available for Cominco's use May allow Cominco to a utilize a portion of ROW not needed for 2 remaining lines South of Hwy 3
Land use for others	No change	Will alienate some land when accessing and leaving slope of hill behind Ootischenia	Will alienate 40 ha of ATCO , 10 ha of Selkirk College and 40 ha of other forest land
Circuits in Viewscape	1-230 kV line north on east ROW of Hwy 3 2-63 kV on ROW by airport 1-230 kV and 2-63 kV lines on ROW south of Hwy 3	1-230 kV line through golf course, along bench and across slope behind Ootischenia 2-63 kV lines on ROW by airport 2-63 kV lines on ROW south of Hwy 3	No lines in east ROW north of Hwy 3 2-63 kV lines on ROW by airport 2-63 kV lines on ROW south of Hwy 3 230 kV line will be visible on the existing ROW exiting the Brilliant Terminal Station and on new ROW as it descends the mountain near Blueberry.
Number of residences affected	21 residences within 100 meters, plus properties by airport	14 residences within 100 meters, plus properties by airport and one residence at 34 meters who is newly affected	14 residences within 100 meters, plus properties by airport

<u>ATTRIBUTES</u>	<u>ROUTE ALTERNATIVE A PRESENT LOCATION</u>	<u>ROUTE ALTERNATIVE C LOW LEVEL BYPASS</u>	<u>ROUTE ALTERNATIVE D HIGH LEVEL BYPASS</u>
Change in EMF field strengths	<p>Slight increases in range of 0.5 to 3 mG for 10 residences beside east ROW north of Hwy 3. (Maximum EMF reading would increase from 4.0 to 7.0 mG)</p> <p>Slight decreases in range of 0 to 14.1 mG for 16 residences beside ROW south of Hwy 3. (Maximum EMF reading would decrease from 15.3 mG to 2.0 mG)</p>	<p>All residences north of Hwy 3 will be reduced to zero</p> <p>All residences south of Hwy 3 will be reduced further (from a max level of 2.0 mG)</p> <p>One resident will be increased from zero to approx. 18 mG (estimated @ 34 meters based on Fig. 3.2 Aquila's Report p. 26)</p>	<p>All residences north of Hwy 3 will be reduced to zero</p> <p>All residences south of Hwy 3 will be reduced further (from a max level of 2.0 mG)</p>
<u>Project Costs</u>			
Construction	Total est. cost \$7,055,000	Total est. cost \$10,355,000	Total est. cost \$11,215,000
Maintenance	\$102,000 per year	\$112,000 per year	\$132,000 per year
<u>Reliability</u>			
Loss of load	<p>Reduced reliability during construction</p> <p>Repair time reduced for easily accessible circuit</p> <p>No delay in project</p>	<p>No reduction in reliability during construction</p> <p>Longer repair times due to poor access</p> <p>Greater probability of structure failure on talus slope</p> <p>Delay in project by one year</p>	<p>No reduction in reliability during construction</p> <p>Longer repair times due to poor access.</p> <p>Possibility of vandalism due to remote location</p> <p>Delay in project by one year</p>
<u>Safety</u>	Construction work in proximity to energized lines increases contact hazards	Construction worker safety improved	Construction worker safety improved

<u>ATTRIBUTES</u>	<u>ROUTE ALTERNATIVE A PRESENT LOCATION</u>	<u>ROUTE ALTERNATIVE C LOW LEVEL BYPASS</u>	<u>ROUTE ALTERNATIVE D HIGH LEVEL BYPASS</u>
<u>Environmental</u>			
Water quality	No change	Could affect upper bench aquifer and private water sources.	Could compromise water runoff into lower aquifers
Wildlife	No change	New clearing could affect small wildlife habitat	Loss of wildlife habitat, particularly ungulate winter range; creates new barrier to wildlife passage; allows increased hunting pressure
Aesthetic	Removes 6-63 kV lines from existing ROW's but replaced by 1-230 kV line	Removes 6-63 kV lines from existing ROW's but new visible powerline above Ootischenia	Removes 6-63 kV lines from existing ROW's but creates wider ROW to access top of mountain (makes ROW behind Brilliant more visible) and creates prominent scar on steep descent from mountain on south end as T/L crosses Hwy 3 and the Columbia River
<u>Resources and land use</u>			
New Right of way requirements	No	Yes	Yes
Forestry	No change	No change	Permanently alienates 40 ha of ATCO land, 10 ha of Selkirk College land and 48 ha of other land plus creates access difficulties for harvesting nearby parcels
Farming	No change	No change	No change

<u>ATTRIBUTES</u>	<u>ROUTE ALTERNATIVE A PRESENT LOCATION</u>	<u>ROUTE ALTERNATIVE C LOW LEVEL BYPASS</u>	<u>ROUTE ALTERNATIVE D HIGH LEVEL BYPASS</u>
Residential subdivision potential	No change	May remove restrictions on Subdivision potential on land north of Highway 3 if Teck Cominco sells ROW to adjacent owners. May alienate other land as new ROW traverses bench	Same as C, except no impact on bench land.
Recreation	No change	No change	Improved access to back country

As can be seen from the analysis, the lowest impact in terms of the environment, capital cost, reliability and impact on resource base is Alternative A. Alternative A will reduce the number of transmission lines in Ootischenia and will be an improvement over the current situation. Alternative C or D would remove all of the transmission lines from a section of the east right of way north of Highway 3 and would benefit seven residences by enhancing their visual aesthetics in their immediate vicinity. However, these alternatives would create new visual impacts elsewhere and would still require two 63 kV lines in the existing right of way beside the airport and south of Highway 3 to serve Blueberry.

Under the Regional District's referendum proposal the residents of the Contribution Service Area would contribute 40 percent of the \$1.855 million or about 18 percent of the estimated incremental cost of Alternative D. Considering the lesser level of analysis of Alternatives C and D and the greater uncertainties in the cost estimates, the Commission does not consider this contribution to be sufficient to affect the comparisons of the alternatives. Even if the full incremental costs of Alternative D were provided from external funding, the Commission considers that the negative impacts of Alternative D are higher than the benefits of moving the 230 kV line out of the present right of way, especially when two 63 kV lines must remain in most of the right of way under either option.

The only difference between Alternative A and B is the location of the pole placement in the right of way. Aquila preferred Alternative B, to improve worker safety during construction and thereby minimizing construction costs. However, local residents would prefer the pole placement of Alternative A which is less close to the east side of the right of way, resulting in improved aesthetics and reduced EMF levels.

The Commission therefore concludes that the significant disadvantages of Alternatives C and D outweigh the disadvantages of Alternative A. Therefore Alternative A is approved as the final route. Aquila is to position the 230 kV line and place the poles within the right of way to minimize impacts on adjacent properties.

2.3.3 Blueberry-Fairview Routing

Aquila's June 3, 2002 reply to the Commission included a report, which evaluated six options for the line route in the vicinity of the communities of Blueberry/Fairview. Maps of the options are attached as Attachment B. The options studied were described as follows:

Option 1: Original preferred Alignment

Aquila's original preferred route around Blueberry Creek and Fairview would travel roughly west from the Blueberry Creek substation for about one hundred meters across the CPR tracks, then follow along between the CPR tracks and the old highway bed for about six hundred meters to the main Blueberry intersection. South from the Blueberry intersection, the original preferred alignment would remain between the rail and Highway 22 for approximately two kilometers to a point south of Fairview, where it would cross the highway and proceed west until it meets the BC Gas distribution line right of way.

Option 2: Adjusted Alignment on East Side of CPR Track from km 9.4 to km 10.6

Option 2 would remain on the original preferred alignment across the CPR railway at the Blueberry Creek Substation, and then along the west side of the rail between the railway and the old highway until the Blueberry Creek intersection. At this point, Option 2 would cross CPR tracks a second time and follow closely along the eastern side of the railway in a southerly direction, remaining on CPR property. At a point just north of Fairview, the new line would cross the tracks a third time and follow between the road and the rail near the boundary between MOT and CPR properties until south of Fairview, where it would turn west to cross the highway and meet the BC Gas right of way as originally proposed.

Option 3: Follow Old Highway Bed across Blueberry Creek to Existing Right of Way

In this alternative, the transmission line would follow the old abandoned highway corridor from the Blueberry Creek junction at kilometer 9.4 diagonally along the Blueberry Creek valley bottom to a point where it would intersect with the existing 63 kV right of way. It would then follow the existing right of way to its intersection with the highway, where it would continue to follow the original preferred alignment between the highway and the rail bed. At a point south of Fairview, the new line would cross the highway and meet the BC Gas line as originally planned.

Option 4: Remain on the existing 63 kV Corridor

Option 5: West of Highway 22 – Parallel to BC Gas Distribution Line

Two options are shown for taking the new line from the Blueberry Creek substation to the BC Gas line. Option 5A follows a direct westerly route and Option 5B follows the preferred route to the Blueberry Creek junction, then heads west. Either route would then follow along the eastern edge of the BC Gas right of way. Both options are shown on the map for Option 5.

Option 6: East Side of River

This option would divert entirely around the community of Blueberry Creek and cross the river further downstream.

The report evaluated the attributes of each of these options against the stated objectives for Aquila's planning criteria. Aquila's conclusion was that the original preferred alignment of Option 1 met these criteria better than other options. However, because of a lack of approval from the Ministry of Transportation and the CPR, Aquila selected Option 2 as its new preferred alignment.

One other option was discussed at the workshop on February 19, 2002. This was described as Alternative B in response to Commission staff information request 7.2 and in response to Kevin and Pam Cormack question 4. This option is essentially a variation of Options 1 and 2 described in the Aquila report to the Commission of June 3, 2002. Alternative B differed from these options in the section from the Blueberry intersection to just north of Fairview. Alternative B crossed Highway 22 at the Blueberry intersection and then followed the highway south, along the west side to a point just north of Fairview, where it crossed Highway 22 and followed the highway right of way on the east side around Fairview. Alternative B was rejected because the Ministry of Highways was concerned that a route along the west side of Highway 22 would interfere with future plans to widen the highway.

Commission Findings

The Commission recognizes that Option 6 is not realistic and considers that Options 5 (a and b) will inconvenience a substantial number of new land owners and could pose significant extra costs during construction. Option 3 has some benefits compared to Option 4 but at increased cost and impact on third parties. Option 1 is no longer feasible.

The Commission concurs with Aquila that Option 2 is the best solution for meeting the stated routing criteria. In approving this option the Commission is cognizant of the relative visual impact the new route will have on previously unaffected owners whose properties border on the CPR right of way. However, the 230 kV line will be located on the west side of the rail line between the tracks and the old highway and any impacts can be mitigated by the appropriate use of tree screens. Although it is unusual for a utility to acquire a new right of way in preference to an existing right of way, the relative improvements to this alignment over the present configuration for the overall community are substantial. In particular, the removal of all eight lines from the most densely populated area of Blueberry will free up the full width of the right of way for other uses.

The Commission approves Option 2, subject to the following two conditions:

**agreements with CPR and MOT that include reasonable compensation levels for right of way use; and
agreement with Teck Cominco that will remove Teck Cominco's lines from the existing right of way.**

If either of these two conditions are not met, the Commission expects Aquila to use the existing right of way through Blueberry-Fairview, with pole placements to minimize impacts on adjacent residents.







