Leading Edge Projects Inc.

John F. Maissan – President
219 Falcon Drive Whitehorse Yukon Y1A 0A2
Phone: (867) 668-3535   Fax: (867) 668-3533
Email: john@leprojects.com   Website: www.leprojects.com

December 2, 2013

Yukon Utilities Board
Box 31728
Whitehorse, Yukon
Y1A 6L3

Attn: Mr. Bruce McLennan, Chair

Re: Final Argument, The Yukon Electrical Company Limited 2013-2015 General Rate Application

Dear Mr. McLennan:

Please find attached Leading Edge's Final Argument.

Thank you for the opportunity to participate in this General Rate Application process.

Yours truly,

John Maissan

John F. Maissan – President
219 Falcon Drive Whitehorse Yukon Y1A 0A2
Phone: (867) 668-3535 Fax: (867) 668-3533
Email: john@leprojects.com Website: www.leprojects.com

IN THE MATTER OF THE YUKON ELECTRICAL COMPANY LIMITED 2013-2015 GENERAL RATE APPLICATION AND YECL AND YUKON ENERGY DSM PLAN

Heard before the

YUKON UTILITIES BOARD

November 4 - 7, 2013

FINAL ARGUMENT OF JOHN MAISSAN LEADING EDGE PROJECTS

Final Argument introductory comments

In the preparation of this written final argument the transcript is referenced by page and line numbers and whenever possible. This reference will appear in brackets as Tr for transcript, p for page number, and Lx-y for line numbers. For example a reference to the transcript at page 428 lines 17 to 19 would appear as (Tr p428 L17-19). The Yukon Utilities Board is referred to as "the Board". Interrogatory responses (IR) will be referenced by their identifying numbers.

In its argument Leading Edge addresses both issues in which it is in agreement with the applicant, The Yukon Electrical Company Limited (YECL), and issues on which Leading Edge has a differing view or disagrees. Leading Edge's silence on issues and requests of YECL in this argument are not to be interpreted as agreement with, or disagreement with, YECL's request or position. Leading Edge leaves these matters to the Board to address based on all the information on the record.

The topics outlined in argument below generally follow the order in which they appear in YECL's application.

Tab 2 Sales and Revenue

1. Declining UPC

In its Application update (Exhibit B-11), YECL puts forward revised Use Per Customer (UPC) figures based on actual experience in 2013. In its Application (Exhibit B-1) on page 2-5 (lines 9-17) YECL indicates that UPC increases were experienced in recent years due to an increase in the installation of electric heat. The paragraph goes on to say that this is not expected to extend beyond 2013. On page 2-3 of the Application YECL describes downturns in the pace of economic activity in Yukon. It would appear that the expectations and conditions described in the Application have come into being in 2013 as indicated in Exhibit B-11. Leading Edge also believes that the rate increases implemented over the past year and a half have also had an effect.

Recommendation: That the Board accepts the reduced UPC forecast by YECL in Exhibit B-11 for the purposes of this GRA.

2. Major industrial customer

In its Application on page 2-7, YECL describes some uncertainty around the timing of the start of operations of Eagle Industrial Minerals at Whitehorse Copper Tailings (WHCT). During the hearing (Tr p184 L18 to p186 L16, and p195 L12 to p198 L25) the delay past the end of 2013 was discussed, and there is obviously no certainty yet with respect to a starting date. Due to uncertainties with respect to industrial sales YECL requested a deferral account "*to capture the difference between WHCT net revenue on existing Rate 39 less forecast purchase power price applied to forecast sales, and WHCT net revenue on existing Rate 39 less forecast purchased power price applied to actual sales*." The deferral account was also discussed in the transcripts referenced above.

Recommendation: That the Board approves the deferral account for WHCT as requested by YECL.

Tab 3 Purchase Power

3. Purchase power – Fish Lake Unit #1

In footnote 1 on page 3-1 of the Application YECL indicates that they have capitalized all of the incremental purchase power costs from the time of the catastrophic failure of Fish Lake unit #1 in March 2010. As justification for this, YECL stated that Board Order 2009-2 directed that purchase power costs incurred due to the Fish Lake rebuilds in 2008-2009 be capitalized. YECL concluded that this ruling should also apply to the purchase power costs incurred as a result of the catastrophic failure of Fish Lake Unit 1 in March 2010 as explained in response to LE-YECL-3.

The issue of capitalizing the purchase power cost for the period between the catastrophic failure in March 2010 and the anticipated in-service date of the rebuilt unit in December 2013 instead of charging the reserve for injuries and damages for this cost was explored in cross examination (Tr p403 L21 to p406 L14). In cross examination YECL stated that charging the reserve for injuries and damages would have been an alternative approach to dealing with the purchase power costs. YECL has a reserve for injuries and damages but did not have extra expense insurance to cover the purchase power cost.

Leading Edge is of the view that purchase power costs as a result of a catastrophic failure is very different from purchase power costs from a planned shutdown for upgrading purposes to which Board Order 2009-02 applied. It is Leading Edge's view that most, if not all, of the purchase power cost should be charged to the reserve for injuries and damages. Including the purchase power cost in the capital cost of Fish Lake Unit #1 replacement artificially raises the capital cost of the project and the levelized cost of energy from the project. At most the downtime that would have been required for a planned replacement of the unit should be included in capital costs. YECL could not state what that time period would likely have been, however Leading Edge is of the view that this would not likely have been any longer than from January 1, 2013 to December 2013. See also item 14 below. Alternatively YECL should be required to absorb the purchase power costs for the period of March 2010 to December 31, 2012.

Recommendation: That the Board approves not more than the purchase power cost incurred in 2013 for inclusion in the capital cost of Fish Lake Unit 1 replacement.

Recommendation: That the Board order YECL to calculate the purchase power cost for the three year period of March 2010 (the date of the catastrophic failure) to December 31, 2012 and to recover this amount from the reserve for injuries and damages or to be absorbed by YECL. Alternatively, should the Board so choose, the entire purchase power cost from March 2010 to the December 2013 in service date should be recovered from the reserve for injuries and damages.

Tab 4 Fuel Costs

4. LNG purchase – Watson Lake

YECL is proposing to do a bi-fuel LNG-diesel project in Watson Lake (Business Case #6 in YECL's Application). The calculation of amounts for Rider F will thus become more difficult. Since a bi-fuel project means that a plant efficiency cannot be forecast, YECL is asking to be able to use the actual equivalent diesel litres to arrive at a fuel deferral amount. The approach laid out in Tab 4 of the application appears to be reasonable.

Recommendation: That the Board approves YECL's proposal to use the equivalent diesel litres IF the Board approves the bi-fuel project at Watson Lake.

Tab 5 Operations and Maintenance Expenses

5. Labour costs

Leading Edge is very concerned with YECL's labour costs escalating beyond sales and customer growth. Leading Edge explored this in IR LE-YECL-2. The growth in labour compliment from Board approved 2009 levels to 2012 was 15.8% and from 2009 to 2015 31.3%. The response to LE-YECL-2(b) indicates 27.8% increase but with the labour compliment correction of an additional 2 FTEs on page 7 of 9 in Exhibit B-11, the percentage increase is actually 31.3%. The increases in labour costs over the same periods (Application Schedule 1.1 and the table on page 5-1) are 16.7% and 32.0% respectively. The increases in the number of retail customers are 9.3% and 13.0% respectively over those periods. Essentially the number of staff and the staff costs in operations and maintenance costs are increasing at twice the rate of the number of customers. Leading Edge considers that the requested increases in labour compliment and costs requested are not justifiable in the circumstances. Economies of scale should not be working in reverse.

In response to the referenced IR, YECL refers to the number of capital projects, the value of capital projects, and the growth in rate base as partial justification for the increase in labour compliment. However, those who work on capital projects have their labour costs included in the capital projects, not in operations and maintenance costs (Application page 5-2) so this cannot be the cost driver.

In Leading Edge's view the proposed additions to staff during the test years should be reduced by a minimum of two. One of the positions that can be cut is the Customer Service Representative (2014) (Application page 1-11). In light of the economic downturn in Yukon described by YECL in the Application (page 2-3) and the lack of market uptake of new residential lots in Whistle Bend subdivision new customer connections and projects will be decreasing.

In 2012 YECL added an Engineering Tech 1 Civil (Application page 1-10). The increase in Fish Lake monitoring was one of the justifications for this position. In 2014 YECL proposes to add an Environmental Technician and increased Fish lake monitoring is again used as partial justification. In Leading Edge's view one of these two positions can and should be eliminated.

Leading Edge is also concerned that the number of additions in the financial / accounting area of the company are more than necessary. Head office administrative expenses (financial reporting and regulatory support) will increase by a factor of 20 from the previous test years to the Application test years (Application Schedule 5.3 line 14). It just seems far too much for a company of YECL's size. Leading Edge does not feel that it has sufficient expertise in this area to make specific recommendations, but hopes that the Board staff has sufficient expertise to address this matter.

Recommendation: That the Board disallow the proposed Customer Service Representative position and at least one other position. If the Board is not comfortable specifying which positions should be cut the Board should order that a vacancy rate of 4 FTEs (or higher).

6. Third Party Distribution Line Property Insurance

YECL indicated on page 5-5 of the Application that they have kept Third Party Distribution Line Property Insurance and that the premium for this insurance in 2012-2013 was $127,000 ($1 million deductible). YECL wishes to discontinue this insurance. In response to LE-YECL-7 YECL indicated that there has not been a single insurance claim in the last 20 years. Leading Edge can see no material benefit in maintaining this insurance expense and supports YECL's request to discontinue it.

Recommendation: That the Board approves the discontinuation of the Third Party Distribution Line Property Insurance as requested by YECL.

<u>Tab 7 Depreciation</u>

7. Depreciation expense

Depreciation expense increased from $3.446 million last approved by the Board in 2009 to $4.192 million in 2012 and is now forecast to increase to $8.569 million in 2015. Some of this increase is due to capital projects coming into rate base but most of it is due to the inclusion of "*future removal and site restoration*" (Application page 7-1 lines 15-17). It is not clear to Leading Edge where the additional money that will be collected now but not used for some years into the future will be held. The basic concern is that YECL will be collecting ratepayer money that will be benefitting the shareholders but not necessarily the ratepayers who are responsible for removal and site restoration costs in any case. Are ratepayers essentially going to be paying twice in the short term – for the present removal and restoration costs as they are incurred plus the future costs too?

Recommendation: That the Board staff carefully reviews this matter to ensure that fairness to present and future ratepayers prevails, and that there is not an inherent unfairness to present ratepayers.

Tab 8 Return on Rate Base

8. Return on Equity

YECL has requested a Return on Equity (ROE) of 9.21% for the years 2013 to 2015. YECL is also requesting a deferral account to capture any changes between this ROE and any changes that may result from decisions made by the BCUC for 2014 or 2015. The methodology used by YECL to arrive at this number is described in the Application pages 8-3 to 8-6.

Recommendation: That the Board approves YECL's requested ROE and deferral account.

9. Capital structure

YECL requests that its common equity ratio be increased to 44% for each of the test years. The rationale for this request is explained in the Application. The issue of business risk is discussed in some detail in the Application and in various IR responses including LE-YECL-11(a). In response this IR YECL states that because a greater percentage of its assets will be in generation it is subject to a higher business risk. Leading Edge is not persuaded by this argument, as the increase in percentage generation assets are due primarily to the value of the rebuilt Fish Lake Unit #1, and the replacement of various diesels in existing diesel plants, not due to additions of additional generation assets beyond those previously in service. In fact the percentage of power purchased from Yukon Energy is increasing as new customers connect to the integrated Yukon grid.

YECL is also asking for a number of new deferral accounts including for ROE changes that may result from BCUC decisions, for the industrial customer at WHCT, for changes in depreciation rates that may occur during the test years, and defined benefit pension plan. The effect of the many deferral accounts in effect is to shield YECL from all sorts of risks (these risks effectively pass on to the ratepayers). Where there is only risk of additional benefits deferral accounts are not used.

YECL has a history of over-earning on their ROE. We saw this in the 2008-2009 GRA and again in this GRA where information provided indicates that in the period 2008 through 2012 inclusive YECL earned well in excess of their approved or most recently approved ROE in 4 out of the 5 years (LE-YECL-11(b) Attachment 1).

Leading Edge is not persuaded that YECL's real level of risk is as high as they argue it is and is not persuaded that a common equity level beyond 40% is justifiable.

Recommendation: That the Board sets YECL's common equity ratio at 40% for the 2013 to 2015 test years.

10. Debt costs

YECL's forecasted long term debt rates are presented on pages 8-6 to 8-7 of the Application. They are 4.35% for 2013, 5.05% for 2014 and 5.80% for 2015. This seems like a very high rate of increase under Canada's present stable but weak economic conditions. Leading Edge notes that if actual interest rates are lower the benefit accrues to the shareholder. Leading Edge requests that the Board staff with the appropriate expertise carefully considers this matter in making their decision.

Tab 9 Capital Additions

11. Street and sentinel lights

In response to LE-YECL-13 YECL states that they will not be using LED street and sentinel lights during the test years. YECL and Yukon Energy have had street light pilot programs that are due to be completed at the end of 2013 (LE-YECL-13). In decisions 2009-2 and 2009-8 the Board stated that energy efficiency and conservation are a critical issue to all Yukon ratepayers. Here we are 5 years later and the utilities are still not treating this as a critical issue. Yukon ratepayers will soon be paying for new generation supplies to be built in Yukon. Given the pilot work done to date by YECL and Yukon Energy, as well as other utilities throughout North America, there is no reason for YECL not to be starting to install LED street and sentinel lights commencing sometime during 2014 to start reducing future energy and capacity requirements.

Recommendation: That the Board order YECL to commence the routine installation (and replacement) of street and sentinel lights with appropriate LED models by mid 2014.

12. Other capital additions

Leading Edge will provide comments on other capital additions under Tab 13 Business Cases immediately below (with the exception of Business Case #30 Demand Side Management, which is addressed separately at the end as it is a joint YECL and Yukon Energy plan). For convenience Leading Edge will group these Business Cases into those that are related or those with similar content.

Tab 13 Business Cases

13. Business Case #1 Fish Lake Unit #2 Penstock Replacement;
Business Case #7 Fish Lake Dyke Upgrade;
Business Case #9 Fish Lake Ditch #3 Diversion Structure Replacement; and
Business Case #28 Fish Lake Water Licence Renewal

In recent years YECL has had to go through a significant review of its Fish Lake hydro system. This included decisions on water license renewal, significant upgrades to components and structures up to 60 years old, and what to do with Fish Lake Unit 1 that failed catastrophically in March 2010. The alternative would have been a decommissioning of the system at what would probably have been very costly, plus a replacement of this renewable hydro energy with Yukon Energy generation which would be a blend of close to 60% diesel (or LNG) generation based on Yukon Energy's last GRA. We have no information on what the decommissioning costs may have been but in

Leading Edge's view these could well have been in the same order as the upgrades and would have been a significant burden to ratepayers.

In our view YECL has shown in their Business Cases as well as in various IRs (LE-YECL-16; YUB-YECL-8; YUB-YECL-37; YUB-YECL-53; YEC-YECL-16; and YEC-YECL-17) that the water license renewal and capital upgrades (and replacement of Fish Lake Unit #1 and building commented on separately below) provide cost effective sources of renewable energy generation at a time when new sources of renewable energy generation are required and being actively pursued.

Recommendation: That the Board approves Business Cases #1, #7, #9, and #28 as presented.

14. Business Case #2 Fish Lake Unit #1 Turbine and Building Replacement

Leading Edge is convinced that replacing the failed unit and replacing the building was (is) the correct decision. See discussion above with respect to the need for cost effective renewable electricity generation.

However, there are two matters on which Leading Edge has differing views. First is with respect to capitalizing all the purchase power costs (detailed in UCG-YECL-11) from March 2010 to estimated completion in December 2013. This matter was discussed during the hearing (Tr p205 L6 to p208 L3, and Tr p403 L21 to p406 L14) Three and three-quarters years does not represent a fast track replacement of a failed turbine and its building. During this period of time YECL was obviously considering its long term options with respect to the Fish Lake hydro system, and we are of the view that it is inappropriate to include all the purchase power cost related to this extended period of time in the capital cost of the replacement. The purchase power cost related to periods of decision making and pondering Fish Lake hydro system future should rightfully be recovered from the reserve for injuries and damages or absorbed by YECL. Leading Edge considers it appropriate for the purchase power cost forecast for 2013 ($369,000) to be included in the capital cost of the replacement but not purchase power costs incurred in 2010 through 2012. See also item 3 above.

The second matter is the projected electrical energy output of the new Fish Lake unit #1. In Board Order 2009-02 the Fish Lake hydro output was set at 8.73 GWh per year although YECL indicates that the 50 year average is 8.48 GWh per year (YUB-YECL-37(d)). YECL also indicates that the expected generation is 5.6 GWh per year, and YECL also states that they project an approximate 13% increase in output (YEC-YECL-17(c) and (d)). A 13% increase from 5.6 GWh per year adds 0.73 GWh per year, and adding 0.73 GWh per year to the 50 year average of 8.48 GWh per year is 9.21 GWh per year. A new long term average generation level of 9.21 GWh per year should be set for the Fish Lake system.

Recommendation: That the Board sets a new long term average generation level for the Fish Lake system at 9.21 GWh per year.

Recommendation: That the Board approves an inclusion of the actual purchase power cost for 2013 (forecast was $369,000) in the capital cost of Fish Lake Unit #1 and building replacement and that the Board orders YECL to recover the purchase power costs for 2010 to 2012 inclusively in the reserve for injuries and damages or to absorb this cost as the Board deems appropriate.

Recommendation: Subject to the above two recommendations, that the Board approves Business Case #2 as otherwise presented.

15. Business Case #3 Watson Lake Unit 4 Replacement;
    Business Case #6 Watson Lake Bi-fuel Project; and
    Business Case #13 Watson Lake Unit 2 Replacement

YECL has three projects in Watson Lake that are somewhat interrelated. There are two diesel engine-generator replacements (units 4 and 2). In IR CW-YECL-14 YECL compares the performance of the existing CAT 3606 900 RPM unit with the proposed CAT 3516 1200 RPM unit. What was not in this response was a comparison of a NEW CAT 3606 with a new CAT 3516. Presumably the technological improvements that permit the new CAT 3516 to out-perform the old CAT 3606 are now also being applied to new CAT 3606s. The reason for the choice of CAT 3516, although not mentioned by YECL, is that the CAT 3500 series engine can be converted to run as bi-fuel engines whereas the CAT 3600 series cannot. So we do not know what benefits we may be foregoing. With the proposed replacements it appears that all diesel generators in the Watson Lake plant will be able to be converted to bi-fuel operation.

With respect to bi-fuel project Leading Edge is concerned that there is “green-washing” going on in the justification for the project. YECL on page 3 of 4 of its Business Case the top two of the list of Business Drivers are as follows:

- *A primary objective of this project is to reduce emissions from the production of electricity, particularly in light of increased reliance on diesel.*
- *Deliver an environmental benefit to the community of Watson Lake through the reduction of emissions of particulate matter, SOx, NOx and CO_2.*

And in response to YCS-YECL-2-3 YECL states:

- *The primary driver for the Watson Lake Bi-Fuel project is to provide local emissions reductions. …*

Leading Edge is convinced from the evidence on the record that environmental benefits, if any, are arguable at best. It is our view that YECL is primarily focused on a potential opportunity to reduce costs, and listing the arguable environmental benefits as top drivers is simply “green washing”. There is a lot of emissions testing that needs to take place before any local environmental benefits can be claimed, and cradle to grave of global environmental benefits compared to diesel, everything considered, is approximately nil.

The projection of cost savings from LNG are, in our view, optimistic. In Europe and Asia LNG costs are 3 to 4 times the cost in Canada, and once export systems are in place Canadian LNG costs will likely increase to export values.

Although there is a potential cost saving argument to be made based on present Canadian LNG prices, Leading Edge is not in favour of the approval of Business Case #6. Leading Edge would much rather that YECL spent a similar level of effort and expense on renewable energy sources from which real environmental benefits would be gained, those sources could be solar PV, wind, biomass, or hydro, or some combination of them.

However, should the Board approve the first phase of this project, Leading Edge is not comfortable with the Phase 2 of the project proceeding without YECL coming back to the Board and the public with actual environmental data and updated cost and cost saving projections. Further we believe that all capital costs and all operating costs beyond the equivalent for a diesel only operation should be held in a work-in-progress account so that if the project is not successful the ratepayers do not pick up the costs. Financial savings over and above diesel only operation, if any, can offset the cost accumulated in the account.

Recommendation: That the Board approves Business Cases #3 and #13 as presented by YECL.

Recommendation: That the Board does not approve Business Case #6 Watson Lake Bi-Fuel Project. Should the Board approve the project nonetheless, it is recommended that Phase 2 not be approved without YECL coming back to the Board with actual emissions and updated cost and cost projection data. And it is then also recommended that any and all capital costs and all O&M costs related to the Bi-Fuel project in excess of diesel only operations be kept in a work-in-progress account to be recovered from financial savings from the project, if any.

16. Business Case # 4 500 kW Mobile Generator; and
    Business Case #12 Carcross 2 MVA Standby Project

YECL has a 350 kW mobile generator now but it is not of adequate capacity to meet peak loads in some of the isolated diesel communities. The proposed 500 kW generator would be able to meet the peak loads.

Carcross is the only significant community in Yukon not to have standby generation whether based on a previous primary diesel plant or otherwise. Even the small community of Stewart Crossing has a standby diesel plant. It is leading Edge's view that such a standby generator should have been installed in Carcross years ago as that area is subject to a higher than average number of outages and is some distance from Whitehorse. YECL proposes to install a 2 MVA diesel generator in the community at a cost of $3 million. The project includes the full package of ancillary equipment including fuel storage, grid connection transformer, and SCADA control. This is very cost effective capacity that will be available to the Yukon integrated grid for peaking or back-up purposes. In our view the grid connected standby generator in Carcross is justifiable and overdue.

Recommendation: That the Board approves Business Cases #4 and #12.

17. Business Case #5 Beaver Creek Unit #2 Replacement
Business Case #11 Beaver Creek Unit #1 Replacement

Units 1 and 2 in the Beaver Creek diesel plant are approaching the end of their useful lives. YECL proposes to replace these units with similar sized units. Leading Edge agrees that the units should be replaced with new units as proposed.

Recommendation: That the Board approves Business Cases #5 and #11 as presented by YECL.

18. Business Case #8 Old Crow Plant Expansion;
Business Case #10 Old Crow Unit #4 Addition; and
Business Case #15 Unit #3 Replacement

The electrical loads in Old Crow have been growing steadily and the diesel plant in Old Crow is small and old (Leading Edge seen and been in it). A new building near the existing old plant with new generation and electrical switchgear installed in it makes a lot of sense. The replacement and addition of the diesel generators as proposed in Business Cases #10 and #15 also appear to be prudent decisions. In other related matters we are pleased to note that the power plant PLC control system in Old Crow can incorporate renewable power supplies (Tr p418 L5 to L16).

Media reports indicate that there will be a winter road into Old Crow in early 2014. It would likely be very cost effective for YECL to get some or all of the proposed equipment to Old Crow on the winter road if at all possible, even if it means accelerating the projects a bit.

Recommendation: That the Board approves Business Cases #8, #10, and #15 as presented by YECL, and that YECL be encouraged to take advantage of the upcoming winter road to secure capital cost savings for the project and ultimately all ratepayers.

19. Business Case #14 Destruction Bay Unit #2 Replacement

YECL is proposing to replace a generator at the end of its useful life with a similar sized unit. In the somewhat related capital work of replacing the plant PLC we are pleased to note that the new system will be able to accommodate other sources of electrical power such as from the proposed wind project there (LE-YECL-14, and Tr p414 L15 to p415 L15).

Recommendation: That the Board approves Business Case #14 as proposed by YECL.

20. Business Case #16 Whistle Bend Subdivision Stage 1 & 2;
Business Case #17 Whistle Bend Stage 3;
Business Case #19 Whistle Bend 34.5 kV Substation Distribution Lines;
Business Case #20 Whistle Bend Substation; and
Business Case #26 Whistle Bend Street Lights

There is no alternative to the provision of power to a new subdivision, and Leading Edge has no problem with the proposed Business Cases except for Business Case #26 for the new street lights. Considering that YECL's and Yukon Energy's LED street light pilots will be completed at the end of 2013, we feel that there could and should be a fairly quick transition to the most appropriate LED street lighting options. In the interest of DSM, which the Board has considered to be a critical matter for Yukon, we can see no reason why LED street lighting should not only be an option, but be very strongly encouraged starting in mid 2014.

This matter was explored in LE-YECL-22 and in cross examination (Tr p422 L14 to p425 L16). Leading Edge does not get the impression that energy efficiency and conservation – DSM – is something that YECL is particularly concerned about. This attitude is definitely not in line with past Board decisions (for example Board Order 2009-02).

Recommendation: That the Board approves business Cases #16, #17, #19, and #20, and that the Board approves Business Case #26 subject to YECL adding LED street lighting options to its available technologies by mid 2014 and that LED street lighting be promoted by YECL as the primary option in 2015 for both new and replacement street lights.

21. Business Case #18 Hillcrest Subdivision Conversion;
    Business Case #22 McIntyre Replacement Stage 1;
    Business Case #24 Downtown Whitehorse 25kV Conversion; and
    Business Case #25 Takhini Marwell 4L315 Upgrade to 266 ACSR

These projects will all improve service reliability overall, and reduce line losses.

Recommendation: That the Board approves Business Cases #18, #22, #24, and #25 as presented by YECL.

22. Business Case #21 Crestview to May Road Corner Double Circuit; and
    Business Case #23 Whitehorse 5L628 and New 35kV Build

Yukon Energy is expanding it Mayo Road Switchyard into a substation with a 138kV to 34.5 kV transformer to provide a new power supply line into Whitehorse for increased power supply security. YECL is re-building its 25kV distribution system into a double circuit line that carries the new 34.5 kV power line into Whitehorse over top of the 25 kV distribution line. This new supply line into Whitehorse will address a security of supply weakness that presently exists. Leading Edge considers these expenditures to be appropriate.

Recommendation: That the Board approves Business Cases #21 and #23 as presented by YECL.

23. Business Case #27 Automated Meter Reading – Whitehorse and area

An AMR project for Whitehorse has been discussed since YECL's 2008-2009 GRA (it was not approved by the Board at that time). Since then there has been an AMR workshop hosted by YECL, and also YECL has been in talks with the City of Whitehorse about potential mutual benefits.

During extensive discussions in IRs and in cross examination during the hearing held in Whitehorse on November 4 through 7, and in undertakings, we have learned the following:

- the proposed meters will be capable of measuring hourly load data but are not Measurement Canada approved for hourly time of use metering;
- there is an optional transducer that can be used with the meter that will turn on or off two customer loads as dictated by a signal through the utility communication system;
- the utility communication system runs through YECL's distribution system wiring and through the household wiring to the optional transducer; there are no radio frequency signals as there are with some "Smart Meters"; and
- The proposed meters are being used by YECL's sister & parent companies in NWT and Alberta and are a standard product for them.

In addition to the above YECL has been able to demonstrate an economic benefit to the use of these meters. Leading Edge considers all of these to be positive features.

Leading Edge would, ideally, like to see meters installed that are capable of time of use metering as we feel that there would be benefits to all ratepayers if we could encourage peak load shaving, load shifting from day to night, and valley filling (the latter particularly in summer). However, we also feel that it is necessary to be pragmatic in this case. The utilities can now do month by month billing so seasonal rates are a possibility already, but we feel that it will still take some time before the utilities are convinced to seriously consider time of use metering. Moving to AMR as proposed by YECL is a step in the right direction and, based on the ability to gather hourly load information, YECL will have data to work with when considering time of use rate issues.

Recommendation: That the Board approves Business Case #27 as presented by YECL.

24. Business Case #29 Downtown Office Building Envelope Upgrades

YECL proposes to upgrade the downtown office building envelope to correct various shortcomings and to improve insulation levels to the City of Whitehorse requirements for new buildings. YECL indicates that an energy reduction of 20% is expected as a result of these upgrades costing $600,000. We are told the actual annual energy savings are estimated to be $1,500 per year (CW-YECL-26). Clearly this would not justify the capital expenditure but the capital investment in the building and its integrity need to be protected (and people are more productive in a comfortable building).

Recommendation: That the Board approves Business Case #29 Downtown Office Building Envelope Upgrades.

YECL and Yukon Energy Demand Side Management Plan

25. Including YECL Business Case #30 Demand Side Management

In Board Orders 2009-02 and 2009-08 the Board instructed YECL and Yukon Energy respectively to work together to develop a DSM policy for the next GRA stating that DSM was a critical issue for Yukon. YECL and Yukon Energy have done extensive background studies and have held a number of stakeholder discussions and public meetings on this subject. The utilities now have a DSM plan that has been put before the Board for consideration.

It is Leading Edge's view that the utilities have spent more time and money than needed to develop a credible DSM plan. The utilities have taken a very conservative, non-aggressive approach to demand management. It appears that even while spending large sums of money on studies towards and developing new generating resources they are concerned about the possibility of eroding sales. So much for putting the ratepayers first!

The DSM plan could and should have been more aggressive in matters other than straight conservation, including peak shaving, load shifting, and valley filling. The utilities, or at least YECL, do not seem to appreciate the 20 MW day to night load swings during the winter months where daytime loads require diesel but night time loads can be served with hydro (Tr p388 L1 to p395 L13, and Exhibit C-4-6). The term demand side management also encompasses increasing the electrical load at opportune times. The grid has appreciable excess hydro energy during the summers, particularly at night and both utilities plus the ratepayers could benefit from appropriate increased sales. Yet we see none of these strategies within the proposed DSM plan. Utilities throughout North America are now implementing or contracting for energy services that do just these sorts of things, why not in Yukon?

Despite its shortcomings, having this DSM plan implemented now is better than having no DSM plan. It can and should be improved in conjunction with the planned reviews every two years. Starting new initiatives to address the shortcomings in the fourth full year of the program (after three years of operational experience) would provide the utilities with lots of time to plan and implement additional DSM measures.

The Yukon government's continuation of the Interim Rate Subsidy and Orders in Council preventing rate class rebalancing are frustrating the ability to send residential consumers with appropriate rate signals. The Board and the utilities can only encourage the government to act in the long term interest of rate payers by dealing with these issues sooner rather than later.

Recommendation: That the Board approves the joint YECL and Yukon Energy DSM Plan and that the Board approves YECL Business Case #30.

Recommendation: That the Board direct YECL and YEC to implement additional DSM measures encompassing some or all of peak shaving, load shifting, valley filling, and surplus hydro sales starting not later than at the start of the fourth year of the DSM program.

Respectfully submitted,

John Maissan
Leading Edge Projects
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