YUB-CW-1

Reference: **Evidence of the City of Whitehorse (CW), Q&A 17, PDF pages 10-11 of 15; YEC 2017-18 General Rate Application (GRA), Table 3.6 – Transmission Costs, PDF page 57 of 381.**

Issue/sub-issue: **Vegetation management**

Quote: "A17. The largest increase in operating costs is the increase to vegetation management. This appears to be the first version of the YEC Vegetation Management policy. Further, YEC appears to have developed its policy with minimal input from other utilities. …

…As the introduction of the Vegetation Management Policy appears to be the driver for the largest cost increase in O&M, I would expect that YEC would do a more robust assessment of what other utilities would do. As such, I suggest that YEC be directed to compare its vegetation management policy to that of other utilities and provide a report in the compliance filing. If it proves that YEC's vegetation management policy drives costs that are higher than required the budget for vegetation management should be reduced."

Preamble: The Board requires clarification of the above-noted statement that the introduction of the Vegetation Management Policy (also referred to as brushing or a brushing program) appears to be the driver for the largest increase in O&M.[1]

Request:

(a) In examining Table 3.6, does Mr. Bell agree that actual net brushing costs between the years 2014 and 2016 included a reduction for deferred brushing costs (in the amounts of $748,000, $632,000 and $551,000, respectively) as a result of Board Order 2013-01, that have not been similarly deducted from the proposed costs for the years 2017 and 2018? Please explain.

(b) Please identify the utility or utilities that Mr. Bell considers are the most comparable in terms of YEC adopting any or all parts of that utility's vegetation management policy. Please explain in terms of the similarities in climate, geographic location of right of ways and any other relevant factor(s) that would make YEC's adoption of a similar policy reasonable.

Response:

(a) Yes, Mr. Bell is aware that there was a reduction for deferred brushing. Mr. Bell notes that in the prior proceeding, the Board ordered a reduction to vegetation management costs, and allowed YEC to collect deferred costs. Mr. Bell is concerned that the YEC

vegetation management policy was developed without adequate research into other utility policies and practices.

(b) Mr. Bell would consider ATCO Electric as comparable. While larger, it largely serves Northern Alberta, and faces geographically disbursed customers.

Mr. Bell's point is not that YEC should adopt any other utility's policy, but that it should have canvassed other similar utilities in an assessment of its policy. From the YEC evidence, it appears that YEC did not undertake such due diligence.

YUB-CW-2

Reference: **Evidence of CW, A7, PDF page 3.**

Issue/sub-issue: **Disruptive technology**

Quote: My main concern is the lack of analysis related to the possibility of any changes that may arise related to the introduction of disruptive technology.

Request:

(a) Please explain what is meant by "disruptive technology".

(b) Please comment on whether the Yukon regulatory framework, applicable statutes or regulations either hinder or promote the inclusion of disruptive technologies.

Response:

(a) "Disruptive Technology" is technology that can significantly affect the way businesses or entire industries operate, forcing industry players to alter their approach to their business or risk losing market share or at worst, becoming irrelevant or obsolete. Mr. Bell is aware of the improvements in micro generation and micro grid technology that are occurring. This includes the improvement in micro storage, and micro generation (including photovoltaics or solar panels). The CW has advised that it has noticed increasing use of micro generation in the City, and in particular the City itself has solar panels in its new Operations Building. As these technologies become robust and cost effective Mr. Bell believes that unregulated organizations may offer energy solutions that will be complementary to, or in competition with, the need for regulated services. As one example, Mr. Bell is aware of a micro grid project in Brooklyn New York that uses micro generation and block chain technology. A link to an article that describes the project follows.

https://www.power-technology.com/features/featurethe-brooklyn-microgrid-blockchain-enabled-community-power-5783564/

Mr. Bell believes that this project is but one example of the possibilities that may lay ahead.

(b) Mr. Bell is not a lawyer, so cannot provide specific comments of applicable statutes or regulations. His observations are as a lay person with expertise in utility matters.

Traditional utilities must be regulated because traditional utilities have historically provide monopoly services. Regulation exists to protect customers from that monopolistic market power.

It is not impossible that new technology will be in the introduced that will be complementary to, or in competition with the existing electric grid. As such, it is important that any significant investment in long lived assets be carefully considered.

Mr. Bell was at the recent CAMPUT conference where there was much discussion of innovation and how that may be fostered. In the sessions, there was discussion of regulatory lag, and how that impacts new technology. That is one of the reasons that traditional utilities are not well positioned to introduce or develop new technology. The other is related to who pays. With any new technology, there are often many failures before any success is achieved. It is not reasonable to require customers to pay for these failures, even if the benefits of successes are passed along to customers.

Any legislation or regulation should not be used to limit the evolution of new energy supplies or solutions or hinder new entrants into the market in support of any incumbents.

As one example, Mr. Bell is aware of proposals to tax Uber, to support the incumbent, less competitive offerings.

YUB-CW-3

Reference: **Evidence of CW, A13, PDF page 9.**

Issue/sub-issue: **Divergent trends in loads**

Quote: In 2016, the GRA amount is lower than the resource plan, but that reverses in 2017, and the variance continues to grow in 2018. This casts further doubt on the veracity of the sales forecast in the resource plan. This pattern of divergence in load is similar to what was experienced in the last resource plan.

Request:

(a) Has CW investigated any reasons for the divergent trends in load forecasts?

(b) Could the largest variance in the forecasts between the Resource Plan and the GRA be attributed to any particular rate class or rate schedule? Please explain.

Response:

(a) No.

(b) Mr. Bell has not examined the reason for the variance. As Mr. Bell understands, the resource plan is a tool to inform the long term planning of the construction of assets. The fact that any one particular rate class may have caused the variance will have less impact on the resulting changes in assets constructed. This is particularly true as the YEC system is an interconnected system.

YUB-CW-4

Reference: **Evidence of CW, A16, PDF page 10.**

Issue/sub-issue: **CW recommendations**

Quote: What is missing is an analysis of the impact on YEC decisions and on customer rates if there is a significant switch to new technology by end use customers, resulting in significantly reduced loads and demands. Unless the resource plan is updated to include the potential for significant loss of loads and demand, and the impact of new technology, it does not provide a realistic assessment of future requirements.

Request:

(a) On this matter, does CW have a specific recommendation for this GRA application?

(b) In CW's opinion, instead of a switch to a new technology, if there was a change to a substitute technology or commodity, what would be the impact on overall load and demand if a natural gas storage and distribution system was developed in Yukon?

(c) Similarly, what would be the impact if electric cars formed part of Yukon electric load?

Response:

(a) It is not possible for Mr. Bell to make specific recommendations at this time. The resource plan appears to be the underpinning to the capital plan. As Mr. Bell has noted, the resource plan has not even contemplated the possibility of disruptive technology. As the resource plan has a longer term horizon, it would seem prudent to consider the potential for disruptive technology, even in a scenario where total load and peak load is reduced by factors such as 10%, 20%, or more later in the term of the resource plan. This reduced load and peak would then be used to test the projected capital asset requirements of YEC.

(b) Mr. Bell believes that natural gas storage and distribution is a viable alternative to other fossil fuels, such as diesel. While it should not supplant hydro energy, it could be used as an interim solution to replace diesel generation. Given that, Mr. Bell does not see natural gas would replace electricity as a fuel source for things such as heating load, as this would mean replacing a significant amount of hydro generation with natural gas. Mr. Bell does not expect that there would be an impact on load or demand, only on sources of supply.

(c) Mr. Bell believes that any material penetration of electric cars will have a significant impact on the electric load and grid. The batteries in cars can be used as local storage as well as load. As such, there will be areas where infrastructure will have to be enhanced, and other areas where the introduction of electric cars will reduce the need for growth in infrastructure. All parties, and in particular, the utility, will have to be cognizant of this and monitor the penetration of electric cars carefully.

YUB-CW-5

Reference: **Evidence of CW, A15, PDF page 10.**

Issue/sub-issue: **Capital spending**

Quote: Typically investments in utility infrastructure are long lived assets, with lives that range from 40 years on. With the current desire for customers to have more control over their costs, and the potential for new technology, one must be cautious when investing in long lived assets. If customers are expected to pay for the costs of prudently incurred costs over their life, then it is incumbent on a utility to minimize any risks of stranded assets.

Request:

(a) Does CW agree there is a trade-off involved when balancing the need for utility infrastructure versus minimizing risks of stranded assets due to the potential for new technology? Please explain.

(b) Notwithstanding the answer to (a), what new technology does CW see as most likely to disrupt the current infrastructure?

(c) In what time frame does CW expect to see these new technologies materialize? Does CW have a forecast on how these technologies will impact utility infrastructure? If so, please provide.

Response:

(a) Mr. Bell has discussed the potential for changes in the electric industry, which will impact the use of the existing grid. While the utility must provide safe and reliable service, in ignoring the potential for changes in its long term resource plan, it is not accurately considering the future. While no one can guarantee what this future will look like, assuming the status quo cannot be prudent. If there is no recognition of possible changes, then the possibility of stranded assets increases.

There is not really a tradeoff, as much as there is an obligation for utility management to think differently when assessing investments in long lived assets.

(b) At this point, it is not possible to predict disruptive technology. There are constant improvements in micro generation, including solar, and improvements in battery storage. As well, as noted above, Mr. Bell is aware of a project in Brooklyn that uses a micro grid, and block chain.

The very nature of disruptive technology is that it is not predicted. As an example, no one anticipated UBER until it was first launched.

(c) It is not possible to predict the timeframes for any disruptive technology. The issue is important to customers of traditional utilities as these utilities invest in long lived assets, with lives of up to, and exceeding 50 years. It would be extremely foolish to assume that the electric energy world will look like it does today in 50 years.

YUB-CW-6

Reference: **Evidence of CW, A21, PDF page 13.**

Issue/sub-issue: **Wholesale sales forecast**

Quote: First, I recommend that the latest approved wholesale sales forecast be included in this application. In addition, it is incumbent on YEC to work closely with AEY in developing wholesale sales forecasts. This does not remove YEC's responsibility to test and assess any forecasts from AEY, but YEC should start with AEY, then provide an assessment of the AEY forecast, and if YEC disagrees with the AEY forecast, provide detailed reasons for not using the AEY wholesale sales forecast.

Request:

Does CW have a recommendation for a particular quantitative adjustment to YEC's forecast wholesale sales? If yes, please explain how that adjustment was determined. If no, why not?

Response:

Mr. Bell believes that the YEC sales forecast for sales to AEY must be reconciled to the approved AEY forecast, unless there is more recent evidence that the YEC forecast is more accurate than the AEY forecast. If there is more recent evidence, YEC should provide that evidence, and a reconciliation of what these changes are to the AEY forecast. In A18 and A19 to his evidence, Mr. Bell summarizes the impact of these changes.

YUB-CW-7

Reference: **Evidence of CW, A22, PDF page 13.**

Issue/sub-issue: **DCF**

Quote: This loosely defined use of the DCF has the impact of significantly reducing the risks facing YEC.

The creation of deferral accounts transfers risk from utilities to customers. The presence of such a loosely defined deferral account should result in a reduction in any requested Return on Equity premium. Alternately, the permitted reasons for use of the DCF should be restricted to things that cause the use of diesel generation that are beyond the control of management.

Request:

(a) Does CW have a recommendation for a particular quantitative adjustment to YEC's requested return-on-equity premium? If yes, please explain what that reduction would be. If no, please explain why CW has no specific recommendation.

(b) Does CW see other risks that may impact the analysis of the risk premium for YEC versus that of the BCUC benchmark utility? Please explain.

(c) Please list and comment on all of YEC's requested or existing deferral accounts and whether or not the existence of those deferral accounts (as risk mitigation mechanisms) warrant further adjustments to YEC's ROE premium.

(d) Does CW support that YEC should have a deferral account that covers all variances in the hydro generation forecast due to variances in water levels based on either long-term average (LTA) or short-term (ST) forecasts of water levels? Please explain.

(e) If CW does not support a deferral account that covers all variances in the hydro generation forecast due to variances in water levels based on either LTA or ST forecasts of water levels, please provide any examples in Canada where such a deferral account do not exist.

(f) Does CW support a limited deferral account for variances in the hydro generation forecast due to variances in water levels, where some risk is taken on by the utility? Please explain.

(g) Given the choice, if CW supports the existence of a deferral account for variances in hydro generation due to variances from water levels, does CW prefer a deferral account based on ST forecasts of hydro generation based on ST forecasts of water levels or does CW prefer a deferral account based on LTA forecasts of hydro generation based on LTA forecasts of water levels. Please explain.

(h) Does CW support a simplified deferral account for variances in the hydro generation forecast due to variances in water levels similar to the diesel deferral account proposed by AEY in the YEC-YECL DCF-ERA proceeding that led to the decision in Board Order 2015-01? Please explain.

Response:

(a) In saying that inclusion of the DCF as currently structured should result in a lower risk and lower ROE, Mr. Bell is recognizing that the pervasive nature of the DCF results in lower risk to YEC. Mr. Bell suggests that the previously approved ROE of 8.25% would be adequate.[2]

(b) Yes, to the extent that YEC has more costs (as a percentage of revenue requirement) subject to deferral treatment than the utilities considered in the BCUC cost of capital proceeding, the Yukon risk premium must be reduced.

(c) Mr. Bell is aware that there are several deferral accounts including:

- Diesel Fuel Price Variance Account (DFPVA)
- Deferred LNG price variances in the amounts collected (or refunded) to customers
- Diesel Contingency Fund (DCF)
- Reserve for Injuries and Damages (RFID)
- Vegetation Management Deferral Account
- Energy Reconciliation Adjustment (ERA)
- Regulatory Hearing Deferral Account

Each of the listed deferral accounts transfer risk from the utility to its customers.

Mr. Bell is aware that utilities typically have RFID and Regulatory Hearing Deferral Accounts. In Mr. Bell's experience, prices, which are largely beyond management control are subject to deferral accounts, but volumes consumed are not.

(d) Mr. Bell does not agree that YEC should have a deferral account that covers all variances in the hydro generation forecast due to variances in water levels. In general, Mr. Bell believes that the use of deferral accounts should be minimized. Deferral accounts should be used in instances where the cost of any variance would be so great that it would impact the financial viability of the utility.

Deferral accounts should be used when:

- Costs are material, as discussed above,

[2] YEC Application, Page 15 (PDF Page 21) line 5.

- The utility does not have the ability to produce a reasonable forecast for the costs, and
- Utility Management has little or no ability to control the costs.

For a cost item to qualify as a deferral item, it must satisfy all three criteria.

Customer rates are based on forecast costs. A deferral account is to protect the utility from incremental costs from the GRA forecast, not provide an opportunity to earn additional returns. As such, any deferral account must provide for recovery of incremental costs, or the pass through of incremental savings, from the GRA forecast.

A deferral account is not to allow the company to make incremental profits, or protect it from management decisions. It should compensate the shareholder for incremental costs, and protect customers from paying more than necessary in light of incremental cost reductions. As such, the structure of the deferral account must be as simple and straight forward as possible. The more complex the deferral account is, the more opportunity there is for abuse of the account.

The deferral must be based on the forecast costs included in the GRA. If the GRA forecast for any cost uses a short term average, then any related deferral account must also be based on the short term average. If the GRA forecast of costs is based on the long term average of costs, then the deferral account must be based on the long term average of costs.

(e) Mr. Bell does not have examples from the rest of Canada. Please see the response to (d) above.

(f) In establishing a deferral account, the intent is to pass the risk along to customers. As stated in the response to (d) above, the deferral account must be structured in a manner that is consistent with the way that the GRA costs are developed. Further, a simpler deferral account is preferable, as it is easier to administer and understand. As such, as long as it does not result in a higher risk premium, Mr. Bell would support the simplified method discussed in the question.

(g) Mr. Bell supports a deferral account that is consistent with the way the GRA costs are developed, and the intent of the deferral account. As Mr. Bell understands, current GRA rates are set using long term average hydro generation.[3] But then YEC states:

> However, DCF cap impacts can modify the GRA approved rates through Rider E rebates or charges, i.e., rebates occur when the $8 million DCF cap maximum is exceeded (as has been the case since 2013), and charges occur if the -$8 million DCF cap minimum is exceeded (as would occur in a drought [see Appendix 3.4 of GRA Application, Attachment 3.4.4]). The net result of Rider E rebates or charges can be as follows:

[3] AEY-YEC-2-2, pae 2 of 5, lines 24-30

- Rider E rebates result in rates that end up reflecting a form of short-term price signal (related to water availability) when abundant water availability and a full DCF enable net rate reductions below rates required at LTA hydro availability levels. [See ERA Application, pages 2-11 and 2-12.]
- Rider E charges result in rates that end up reflecting a form of short-term price signal (related to water availability) when drought and a depleted DCF require rate increases above rates required at LTA hydro availability levels. Appendix 3.4 of the GRA Application, Attachment 3.4.4 shows that at the GRA forecast load of about 420 GW.h/yr. and the current +/- $8 million DCF caps:
    - The average annual Rider E charge needed to recover -$8 million as a16 minimum cap over a consecutive seven years after a severe drought would approximate $4.2 million/year.
    - This Rider E requirement would drop to $2.2 million/year over six years if the DCF cap was increased to +/- $16 million.[4]

This would seem to indicate that there is a short term impact included in rates as well, making it difficult to choose between a deferral account based on short term forecasts of hydro generation and water levels, or one based on long term averages.

Please also see the response to (d) above.

(h) Yes, please see the response to (d) above

[4] Ibid, page 3 of 5, lines 1-19