# YUKON UTILITIES BOARD

# IN THE MATTER OF the *Public Utilities Act*

# YUKON ENERGY CORPORATION (YEC)
# 2017-2018 General Rate Application (GRA)
# and
# Energy Reconciliation Adjustment (ERA) Part II

# EVIDENCE OF RUSS BELL, CPA, CMA

## Submitted on behalf of:

## The City of Whitehorse

**April 20, 2018**

## Section 1 – Introduction

**Q1. Please state your name and business location**.

**A1.** My name is Russ Bell, and I am located in Edmonton, Alberta.

**Q2. What are your qualifications?**

**A2.** I hold a Bachelor of Commerce Degree from the University of Alberta, and am a CPA, CMA.

**Q3. What is your business and regulatory experience in the regulated natural gas and electrical industry?**

**A3.** I have over 35 years' experience in the utility industry. I have worked in utilities and representing customers. I have spent the last 15 years representing the interests of customers in Alberta, British Columbia, the Northwest Territories and the Yukon. I have been involved in general rate applications for distribution, transmission, and retail segments of the market, both in cost of service and incentive based proceedings. As well, I have been involved in the Alberta Smart Grid Enquiry, as well as in proceedings related to the implementation of Advanced Metering Infrastructure. I have appeared many times before the Alberta Utilities Commission, and its predecessors, the British Columbia Utilities Commission, the Northwest Territories Public Utilities Board, and the Yukon Utilities Board. My CV is attached as Appendix 1.

**Q4. On whose behalf is this written evidence prepared?**

**A4.** This evidence is written on behalf of the City of Whitehorse.

**Q5. What is the purpose of this evidence?**

**A5.** This evidence examines the proposed cost increases in 2017 and 2018.

**Q6. What issues does this evidence address?**

**A6.** 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. YEC appears to have prepared

its GRA with the assumption that there will only be technological changes that it will implement on its Grid and not changes that the end use customer may implement.

**Q7. Please provide your view as to the role of regulation.**

**A7.** Regulation protects utility customers from the market power of monopoly utilities that provide essential services. In this regard, I agree with Willie Grieve, Q.C., Chair of the Alberta Utilities Commission, who explains this as follows:

> In 1915, the province found itself inundated with complaints from Albertans who wanted electricity, natural gas and telephone services. These were new services that promised to improve everyone's quality of life and drive the new economy in the 20th century. **Newspaper accounts were full of stories about utility companies refusing to provide service, preferring their friends and charging too much for service or for hooking up customers.** There was anger and frustration in the air and no one seemed to have much sympathy for the challenges faced by the companies themselves. Indeed, when the Board of Public Utility Commissioners was created, one newspaper account referred to the noble band of regulators being there to protect the public from the practices of the utility companies.
>
> And Alberta was not alone. These same types of complaints and concerns prompted the creation of the Interstate Commerce Commission in the United States in 1887 and the Board of Railway Commissioners in Canada in 1905 to deal with similar types of complaints about railways – in both cases, their nations' first national regulatory agencies.
>
> **Over time, the reason for regulating came to be understood as this: when a company exercises monopoly control over the supply of an essential public service (such as rail services at that time), it is likely to charge prices that are too high and provide services of inferior quality**. Regulation steps in where competition does not, to remedy the market failure.[1]

**Q8. What are the causes of increased costs for the YEC in 2017 and 2018?**

**A8.** In the initial Application, Revenue Requirement increases by $5.858 million (13.7%) in 2017 compared to 2016, and a further $1.320 million (2.7%) in 2018 compared to 2017.

[1] One Hundred Years of Public Utility Regulation in Alberta, by Willie Grieve, Q.C., Energy Regulation Quarterly, September 2015, Volume 3, Issue 3, 2015. http://www.energyregulationquarterly.ca/articles/one-hundred-years-of-public-utility-regulation-in-alberta#sthash.TgLdb9QY.dpbs

In the "Alternate Forecast" Application, I have prepared an analysis of the reasons for the increased costs from the Tab 3 Tables.

| | Actual 2016 | Proposed 2017 | Proposed 2018 | | Actual 2016 | Alternate 2017 | Alternate 2018 |
|---|---|---|---|---|---|---|---|
| Revenue Requirement | $ 42,686 | $ 48,544 | $ 49,864 | | $ 42,686 | $ 46,514 | $ 49,159 |
| Cost Increases | | $ 5,858 | $ 1,320 | | | $ 3,828 | $ 2,645 |
| | | 13.7% | 2.7% | | | 9.0% | 5.7% |
| | | | | | | | |
| Causes | | | | | | | |
| Increased Capital | | $ 1,744 | $ 1,330 | | | $ 1,739 | $ 1,333 |
| Amortization of Deferred Charges | | $ 2,301 | $ 9 | | | $ 2,302 | $ 8 |
| Brushing | | $ 985 | $ 5 | | | $ 985 | $ 5 |
| Administration | | $ 423 | -$ 147 | | | $ 423 | -$ 147 |
| RFID | | $ 248 | $ - | | | $ 248 | $ - |
| Fuel and Purchased Power | | $ 222 | $ 26 | | | -$ 1,799 | $ 1,345 |
| Other | | -$ 65 | $ 98 | | | -$ 69 | $ 101 |
| | | $ 5,858 | $ 1,320 | | | $ 3,828 | $ 2,645 |

In the initial Application, it is clear that the majority of increases in costs relate to increased capital and to the amortization of Deferred Charges. As well, there are increases in ongoing operations related to changes in brushing, increases in Administration, and increases related to the Reserve for Injuries and Damages (RFID). The reasons are essentially the same in the Alternate Forecasts with the exception of Fuel and Purchased Power.

**Q9. What is causing the increases in costs related to capital?**

**A9.** Increases in costs due to increased capital are caused by ongoing capital spending. The following summary, taken from Table 5.1 summarizes capital spending and net additions.

| | Actual 2016 | BP 2017 | BP 2018 |
|---|---|---|---|
| **Total Major Projects** | 5,512 | 9,852 | 8,700 |
| **Subtotal Ongoing Capital** | 6,962 | 4,753 | 5,933 |
| **Total Expenditures** | 12,474 | 14,605 | 14,633 |
| | | | |
| **Net Increases to PP&E** | 11,500 | 14,492 | 14,631 |

I note that Table 5.1 was not updated in the Alternate Forecast filing.

Further, YEC spent deferred costs of $5.993 million in 2016 and forecasts deferred costs of $5.570 million in 2017 and 17.631 million in 2018.[2] Combined this results in expenditures over the test period of over $52 million.

| | Actual 2016 | BP 2017 | BP 2018 |
|---|---|---|---|
| **Capital Expenditures** | 12,474 | 14,605 | 14,633 |
| **Deferred Expenditures** | 5,993 | 5,570 | 17,631 |
| | 18,467 | 20,175 | 32,264 |

**Q10. How does YEC justify its capital program?**

**A10.** YEC provides documentation for capital projects over $1.0 million in Tab 5.2.1 of its Application, and an overview of capital projects between $0.1 million and $1.0 million in Tab 5.2.2 of its Application.

YEC provides documentation for deferred projects over $1.0 million in Tab 5.3.1 of its Application, and an overview of deferred projects between $0.1 million and $1.0 million in Tab 5.3.2 of its Application.

In addition, YEC provided a copy of its 2016 Resource Plan. In response to CW-YEC-1-1, YEC explains that it provided its 2016 its Resource Plan to "provide context for the GRA capital expenditures and ongoing capital planning costs included in the test year forecasts."

In reviewing the proposed capital projects and deferred projects, YEC has provided a level of detail that is consistent with prior applications. The issue I have is that investment in utility assets commits the utility and its customers to increasing rates almost in perpetuity. As utility asset lives are in the 40 to 50 year range, any investment today will result in costs to customers for the life of the assets.

[2] Tabs 5.6, 5.7, and 5.8

**Q11. Why is investment in long term assets a concern?**

**A11.** In CW-YEC-1-3, YEC admits that "[t]he issue of stranded electricity utility asset risks related to major disruptive technology change is an emerging issue in many jurisdictions."

If there is a major disruptive technology, there is the distinct possibility that there will be stranded assets that will be unrecovered. As such, it is crucial that the potential for such disruptive changes be considered when creating a capital plan.

In response to CW-YEC-1-3, YEC states that:

> The 2016 Resource Plan incorporates the need for flexibility to deal with risks such as major and sudden changes in loads, and the possible inability to develop a preferred resource proposed in the Action Plan. The Action Plan is resilient and robust under various potential load scenarios and regulatory, financial and development outcomes. A portfolio of relatively small, scalable and modular assets, as proposed in the Action Plan presents a lower risk than a single large asset, in terms of regulatory approvals, financing, fuel diversity and resourcing. To further reduce risks, the resource plan is revisited and adjusted every five years to reflect changes, including that of possible disruptive technology changes.

I have reviewed the section of the resource plan related to risks. In Section 7.2 of the resource plan, YEC discusses Uncertainties and Risks. These risks include:

- Generation fuel price volatility and escalation uncertainty, both short and long-term.
- Hydrology uncertainty.
- Project feasibility uncertainty.
- Equipment reliability uncertainty.
- Conservation delivery uncertainties.
- IPP supply uncertainty.
- Labour and resource uncertainty.
- Capital availability uncertainty.
- Regulatory uncertainties.

- Policy uncertainties related to specific generation types.
- Economic development uncertainties.
- Electrification uncertainties, as driven by policy or technological change.
- Technological uncertainties.
- Uncertainties over distributed electrical generation technologies
- Hydrology uncertainty
- Temperature uncertainty
- Climate change uncertainties[3]

The only risk that relates to disruptive technology is "Uncertainties over distributed electrical generation technologies" where YEC states:

> Uncertainties over distributed electrical generation technologies such as solar panels, which could lead to the risk of lower electricity demand to be serviced by YEC, or a significant change in the annual pattern of demand. The resulting risk is increased rates caused by reduced load and, consequently, reduced sales.[4]

YEC then refers to Section 8[5] where it discusses its portfolio analysis.[6] In reviewing the portfolio analysis, there does not appear to be any consideration of the potential for extensive use of micro generation, micro storage and micro grids. While the cost of such technologies may be prohibitive now, it is quite likely that the new technology will become more cost effective over time. This is quite common in the tech world.

When the prices for micro generation and micro storage fall, and customers start to invest in new technology, there is the distinct possibility for spiraling costs, as the utility attempts to recover increasing costs over declining load and peak demand.

Further, the Yukon Conservation Society ("YCS") explored the issue of new technology. In an information request, the YCS stated:

[3] 2016 Resource Plan Part 2, pdf pages 120-122
[4] 2016 Resource Plan, Part 2, pdf page122
[5] 2016 Resource Plan, Part 2, pdf page 123
[6] commencing on pdf page 129 of the 2016 Resource Plan, Part 2

> The relationship between utilities and their rate base (customers) is rapidly changing, as customers also become suppliers. As the nature of the grid changes from a hub and spoke model to a network of multiple suppliers and customers, there will be changes to the income and expenses of YEC.[7]

And:

> A smart grid will be integral to accommodating the above change. This will involve smart meters and other, more complex changes to manage the rapidly changing flows of electricity from multiple intermittent sources.[8]

In its response, YEC indicates that its grid is not mature enough for the implementation of the suggested changes.[9]

**Q12. Are customers concerned about increasing prices?**

**A12.** Yes. I was involved in the Northwest Territories Power Corporation (NTPC) rate hearing in July 2017. At that hearing customers lined up to express their concern about increased energy costs. The issue is similar in this application, as NTPC provides wholesale electricity to the local distributor for Yellowknife. In this application, YEC provides wholesale energy to the distributor in Whitehorse.

**Q13. What are your concerns with the sales forecasts?**

**A13.** In response to CW-YEC-1-2 (b) and (d), YEC provides historical data related to the load and demand for the current and last two resource plans. Using the data, there is a pattern of load divergence between both versions of the 2011 Resource Plan and the actual load.

[7] YCS-YEC-1-3 (a)
[8] Ibid (b)
[9] YEC response to YCS-YEC-1-3 (a) and (b)

| | Base Case with DSM - Total Load (GW.h) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Forecast Years | 2006 RP - 1.85%yr Case | 2011 RP - July 2012 Version | 2011 RP - Nov 2012 Version | Actual | Actual vs 2006 Plan | | Actual vs 2011 RP - July 2012 | | Actual vs 2011 RP - Nov 2012 | |
| 2006 | 302.0 | | | 302.0 | - | 0.00% | | | | |
| 2007 | 307.6 | | | 307.7 | 0.1 | 0.03% | | | | |
| 2008 | 313.3 | | | 315.7 | 2.4 | 0.77% | | | | |
| 2009 | 319.1 | | | 345.6 | 26.5 | 8.30% | | | | |
| 2010 | 325.0 | | | 351.5 | 26.5 | 8.15% | | | | |
| 2011 | 331.0 | | | 368.7 | 37.7 | 11.39% | | | | |
| 2012 | 337.1 | 416.0 | 406.0 | 392.1 | 55.0 | 16.32% | - 23.9 | -5.75% | - 13.9 | -3.42% |
| 2013 | 343.3 | 430.0 | 412.0 | 388.5 | 45.2 | 13.17% | - 41.5 | -9.65% | - 23.5 | -5.70% |
| 2014 | 349.7 | 443.0 | 437.0 | 373.9 | 24.2 | 6.92% | - 69.1 | -15.60% | - 63.1 | -14.44% |
| 2015 | 356.2 | 449.0 | 449.0 | 380.7 | 24.5 | 6.88% | - 68.3 | -15.21% | - 68.3 | -15.21% |
| 2016 | 362.8 | 455.0 | 461.0 | 386.0 | 23.2 | 6.39% | - 69.0 | -15.16% | - 75.0 | -16.27% |

YEC indicates that the sales and generation forecasts for the GRA were prepared separately from the 2016 resource plan.[10] In CW-YEC-1-4, YEC provides a comparison of the load trends. When one compares the limited data provided by YEC, there is a divergent trend.

| | 2016 | 2017 | 2018 |
|---|---|---|---|
| GRA | 412812 | 420398 | 382966 |
| Resource Plan | 414300 | 417800 | 377000 |
| Variance | -1488 | 2598 | 5966 |

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.

**Q14. What is missing from the resource plan?**

**A14.** First, I note that the plan is a 20 year plan. In that 20 year plan, there is no scenario with a significant penetration of disruptive technology, which includes significant reductions in annual load and peak demand. This would have at least two impacts, either dramatically increased prices as there is more and more idle capacity, or changes in the

[10] CW-YEC-1-1

proposed resourcing that YEC would implement, neither of which are presented in the long term plan.

**Q15. Why is this important?**

**A15.** 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. NTD please complete the thought.

**Q16. What are your recommendations regarding Capital?**

**A16.** YEC's capital plans appear to be built upon the assumption that YEC will continue to provide services in the same way it always has in the past. While it does anticipate that it will introduce new technology, such as storage or solar panels, the assumption appears to be that YEC will continue to provide the vast majority of the energy used in the Yukon. 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. As such, it is not a reliable assessment of future needs for capital. Accordingly, the costs of the study should be excluded from rates.

**Q17. What are your concerns with Vegetation Management?**

**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.

> The policy was drafted by internal YEC staff with collaboration and input from the operations, environment, health & safety, and engineering departments. In addition, the policy reflects a review of brushing practices

> which was reviewed in the 2012/13 application. While YEC did some cursory reviews of other utility brushing approaches, these reviews were not used in any substantive way in the YEC policy development.[11]

I have been involved in rate applications in Alberta for the last 15 years. Each electric utility I have reviewed has a policy for vegetation management. While I would not recommend that another utility's policy be adopted without any review, I would have expected that other utility policies and practices should have been used to develop the YEC policy.

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.

**Q18. What are your concerns with the wholesale sales forecasts?**

**A18.** There appears to be a disconnect between the forecasts of wholesale consumption for ATCO Electric Yukon (AEY) and YEC.

AEY provides a comparison of its forecast of wholesale sales for 2017 to the YEC forecast. YEC forecasts 309,000 MWh, and AEY's approved forecast is 314,234 MWh.[12] YEC explains the difference due to the timing of the forecasts.[13]

CW also pursued this issue. YEC repeated its discussion of the timing of the forecasts.[14] When asked to "fully explain the discussions and communications between YEC and AEY regarding forecast sales and potential changes in sales levels", YEC replied:

[11] CW-YEC-1-29 (b)
[12] AEY-YEC-1-1
[13] Ibid.
[14] CW-YEC-1-11

> Senior management of AEY and YEC participated in both conference calls and email communications. Prior to filing of YEC's Application, no discussions occurred on this matter after the AEY Compliance Filing.[15]

Also, I note that the January to July actual wholesale sales are 188.6 GWh, compared to the GRA forecast of 176.7 GWh.[16]

**Q19. What is the impact of this forecast difference between AEY and YEC for forecast sales?**

**A19.** YEC was requested to provide the impact of using AEY forecasts. YEC states it does not have the information used by AEY to prepare its compliance filing forecast.[17]

With a better forecast, there would be a slight decrease in additional revenue required. The reduction would be $0.027 million in 2017 and $0.014 million in 2018[18]. There are also impacts to Rider J.[19]

If the year to date variance noted above continues the impact of rates could be even larger.

**Q20. What is your experience in forecasting sales for large customers?**

**A20.** Wholesale sales comprises 78% of total sales in 2017 and 2018, and 80% of Firm sales. In my experience, when a utility deals with such a large customer, it would work much closer with the customer to understand its operations, its needs and its requirements. This would allow a much better understanding of sales forecasts and capital requirements.

From the responses to information requests, there appears to be only a cursory understanding of the customer and its needs and expected sales.

[15] CW-YEC-1-11 (c)
[16] YUB-YEC-1-59 (b)
[17] YUB-YEC-1-3, page 1 of 5
[18] YUB-YEC-1-3, page 3 of 5
[19] Ibid

**Q21. What do you recommend regarding forecast wholesale sales?**

**A21.** 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.

**Q22. What are your views regarding the DCF?**

**A22.** YEC indicates that it "does not secure additional earnings when water conditions are better than LTA, and YEC's earrings are not reduced when water conditions are worse than LTA."[20] YEC then provides Figure 1 as an example.

Following Figure 1, YEC indicates that payments into or out of the DCF fund can be affected by other things including "enhancing winter storage and changes due to actual system operations" and that such items do not affect YEC earnings.

The use of the DCF appears to be loosely defined. It appears that YEC has the ability to use the DCF to offset management decisions, including the decision to enhance winter storage and alter system operations. 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.

[20] CW-YEC-2-3 (b)

**Q23. Do you have any other observations?**

**A23.** Yes, I note that there is no place in a YEC application to understand total labour and cost per FTE. I am aware that in Alberta, there is a minimum filing requirement that includes a schedule that identifies total labour and FTEs. In response to CW-YEC-1-17 YEC indicates that the Whitehorse analysis in the preamble was incorrect due to the allocation of costs to capital. As labour is a significant portion of any YEC application, it would be helpful to understand the total labour incurred and forecast by YEC in one place. The following table is taken from the Alberta minimum filing requirements. It would be helpful if YEC were to file a similar table in all future applications. The Alberta schedule is for Transmission. I would recommend that there be one schedule for YEC, including all labour.

| Company Name XXXXX | | | | | | |
|---|---|---|---|---|---|---|
| General Tariff Application | | | | | | |
| Schedule of Transmission Costs | | | | | | |
| $m | | | | | | |
| | | | | | | |
| Line No. | Description | Prior Yr. 3 Actuals | Prior Yr. 2 Actuals | Prior Yr. 1 Forecast | Test Period Yr. 1 | Test Period Yr. 2 |
| | | | | | | |
| 1 | Direct O&M - Labour | | | | | |
| 2 | Direct O&M - Fringe | | | | | |
| 3 | Direct O&M - Contractor Services | | | | | |
| 4 | Direct O&M - Other | - | - | - | - | - |
| 5 | | - | - | - | - | - |
| 6 | | | | | | |
| 7 | Isolated O&M - Labour | | | | | |
| 8 | Isolated O&M - Fringe | | | | | |
| 9 | Isolated O&M - Contractor Services | | | | | |
| 10 | Isolated O&M - Other | | | - | - | - |
| 11 | | - | - | - | - | - |
| 12 | | | | | | |
| 13 | General O&M - Labour | | | | | |
| 14 | General O&M - Fringe | | | | | |
| 15 | General O&M - Contractor Services | | | | | |
| 16 | General O&M - Other | | - | - | - | - |
| 17 | | - | - | - | - | - |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | Total Operations & Maintenance - Labour | - | - | - | - | - |
| 21 | Total Operations & Maintenance - Fringe | - | - | - | - | - |
| 22 | Total Operations & Maintenance - Contractor Services | - | - | - | - | - |
| 23 | Total Operations & Maintenance - Other | - | - | - | - | - |
| 24 | | - | - | - | - | - |
| 25 | | | | | | |
| 26 | Capital - Labour | | | | | |
| 27 | | | | | | |
| 28 | Other - Labour | | | | | |
| 29 | | | | | | |
| 30 | Total Transmission - Labour | - | - | - | - | - |

**Q24. Does this conclude your evidence?**

**A24.** Yes, at this time.