Yukon Energy Corporation
Compliance Filing to Board Order 2019-04

Yukon Utilities Board Information Request to Yukon Energy Corporation (YEC)

YEC-YUB-1

Reference: **Application, Appendix 2.1 — Page 2.1-1**
Issue/sub-issue: **Complexity**
Quote: YEC quotes directions from Board Order 2018-10:
The Board finds (paragraph 320) that the existing DCF is complex and that a simpler mechanism is needed for adjusting for variances between approved forecast hydro and thermal generation and actual (rather than modelled) hydro and thermal generation in a test year.

Request:

What options did YEC consider, other than the fixed change factor, to reduce the complexity of the Low Water Reserve Fund LWRF calculation? If other options were considered, why were those options not adopted for the LWRF calculations. If no other options were considered, please explain why.

YEC-YUB-2

Reference: **Application, Appendix 2.1 — Page 2.1-2, response, point 5**
Issue/sub-issue: **Thermal fuel ratio**
Quote: The new mechanism proposed in the 2017-18 GRA to provide that costs for YEC thermal generation savings (excess) are calculated so that YEC's final fiscal year expense for the total expected thermal generation (i.e. YEC expense after all transfers) is 90% LNG and 10% diesel as assumed in the GRA forecast, subject to the constraint that the LNG share of any transfer into or out of the LWRF cannot exceed 100%.

Request:

(a) Please explain and illustrate the impact if YEC is not restricted to a thermal ratio of 90% LNG and 10% diesel.

(b) Why is it necessary that the thermal ratio be fixed?

YEC-YUB-3

Reference: **Application, Appendix 2.1 — Page 2.1-3**
Issue/sub-issue: **Simplified LWRF method**
Quote: The above changes in the amended LWRF were provided in the first Compliance Filing to simplify, as directed, the method used to determine the variance in hydro generation due to water availability.

Request:

Please explain how each of the five points in the response on page 2.1-2 simplify the process for determining the LWRF.

YEC-YUB-4

Reference: **Application, Appendix 2.1 — Page 2.1-3**
Issue/sub-issue: **Actual load versus forecast load**
Quote: …In order to address this onus, the LWRF first determines (as provided for in the first Compliance Filing) the overall thermal generation cost change due to water condition changes for the actual load; the second step then assigns a portion of this thermal generation cost change to the forecast load for assignment to the LWRF as directed by the Board.

Request:

(a) Why does YEC's proposed LWRF calculation include water condition changes for actual load? Could a two-step process be used for load, (1) up to the forecast level, and then (2) applying a set of assumptions for load above forecast?

(b) In order to determine the forecast thermal generation at the forecast level of load can the YECSIM model actual hydro conditions for actual load up to the forecast level of load?

(c) For a test period in which a load forecast has been determined, at the start of that test year would YEC expect the forecast load to equal its forecast?

(d) Regarding the response to part (c) above, in order to meet changing hydro conditions, at what point in a test year does YEC, through its operations, change its hydro generation from that reflected in the forecast for that test year? Please explain.

(e) Regarding the response to part (c) above, in order to meet changing load conditions, at what point in a test year does YEC, through its operations, change its hydro generation from that reflected in the forecast for that test year? Please explain.

YEC-YUB-5

Reference: **Application, Appendix 2.1 — Page 2.1-4**
Issue/sub-issue: **LWRF modelling**
Quote: Absent model analysis to assess actual thermal generation relative to actual firm load (and to determine how actual thermal generation compares with LTA thermal generation as determined for the GRA approved forecast), there is no basis to use the above information to do what the Board directs, i.e. to determine what actual thermal generation would have been with actual water conditions and only the forecast load.

Request:

Within the existing YECSIM model, could model analysis be used to assess actual thermal generation relative to actual firm load? If it can, what is the expected cost of the analysis?

YEC-YUB-6

Reference: **Application, Appendix 2.1 — Page 2.1-5**
Issue/sub-issue: **Estimated actual diesel generation**
Quote: …Board Order 2019-04 requires that the LWRF be determined based on estimated actual thermal generation for the forecast load; to comply with this direction, the percent of actual diesel at the estimated actual thermal generation for the forecast load is assumed to be the same as the actual diesel generation percentage of actual year-end YEC firm generation (see Attachment 2.1-1 and Tables 2.1-2 and 2.1-3 for examples).

Request:

Please explain how the accounting works in the LWRF if the actual diesel generation percentage is different from the forecast.

YEC-YUB-7

Reference: **Application, Attachment 2.1-1, pages 2.1-1 to 2.1-2**
Issue/sub-issue: **LWRF Term Sheet — Fixed change factor**
Quote: At actual YIS firm load, LTA thermal generation (i.e. thermal generation assuming the same water conditions for hydro generation as approved for the GRA thermal forecast) equals the GRA expected LTA thermal generation plus a Fixed Change Factor of 45.3% share of the change in YIS firm load (actual minus approved GRA forecast). YEC will provide the Board, for review and approval, an update to the Fixed Change Factor when required in future to address material changes in LTA hydro system capability due to changes in loads, installed capacity, licensing/permits or other factors. (Footnote removed)

Request:

Please discuss the impact to YEC and customers if the above quoted paragraph is removed from the term sheet.

YEC-YUB-8

Reference: **Application, Attachment 2.1-1, page 2.1-2**
Issue/sub-issue: **LWRF Term Sheet — LWRF Thermal Savings (Costs)**
Quote: Starting with YEC fiscal year 2018, costs for YEC thermal generation savings (excess) are calculated so that YEC's final fiscal year expense for the total expected thermal generation (i.e., YEC expense after all transfers) is 90% LNG and 10% diesel, subject to the constraint (when setting LWRF based on actual load) that the LNG share of any transfer into or out of the LWRF cannot exceed 100%. Fuel costs for this calculation are based on the last approved average cost of LNG and diesel fuel for YEC per kWh based on the most recent YEC GRA. The LWRF example in Table 2.1-3 reflects these requirements based on fuel prices in the 2017/18 GRA, with adjustments to comply with Board Order 2019-04. (Footnotes removed)

Request:

Please discuss the impact on YEC and customers if the above quoted paragraph is removed from the term sheet.

YEC-YUB-9

Reference: **Application, Attachment 2.1-1, pages 2.1-2 to 2.1-3**
Issue/sub-issue: **LWRF Term Sheet — Diesel on the margin**

Request:

Please discuss the impact on YEC and customers if the paragraph regarding "Diesel on the Margin" is removed from the term sheet?

YEC-YUB-10

Reference: **Application, Attachment 2.1-1, page 2.1-3**
Issue/sub-issue: **LWRF Term Sheet — Quantum & Cap**

Request:

(a) Should the cap be reconsidered when new major loads are coming onto the system? Please explain.

(b) Should the cap be reconsidered when new major loads are leaving the system? Please explain.

(c) Should the cap be reconsidered when new major production facilities are either being deployed on the system or being removed from the system? Please explain.

YEC-YUB-11
Reference: **Application, Attachment 2.1-1, page 2.1-3**
Issue/sub-issue: **LWRF Term Sheet — Quarterly and Annual Reporting**

Request:

(a) Should the LWRF be adjusted on an annual basis or, alternatively, as part of the process for a GRA? Please explain.

(b) Should the LWRF be reconciled on an annual basis or as part of the process for a GRA? Please explain.

YEC-YUB-12
Reference: **YEC Technical Session, Notes for Oct. 8, 2019 technical session final.doc, graphs pages 15 and 16 and table on page 19**
Issue/sub-issue: **YEC cost risks**
Quote: The figure highlights the water related thermal generation of 37.09 GW.h related to load changes that YEC would be at risk as a cost. [page 16]

Preamble: Scenario 4 in the graphs and table, the drought scenario, uses an increase in load of 37.8 GW.h or a 9% increase in load over forecast and an increase in thermal generation of 89.64 GW.h or an increase of 548% in thermal generation over forecast.

Request:

(a) Please comment on the probability that YEC could incur a load forecasting error of 9% or greater during a test period.

(b) Please comment on the probability that YEC could incur a thermal generation forecasting error of 548% or greater during a test period.

(c) With respect to the response to part (b), would the use of a short-term forecast provide a more accurate accounting in a drought scenario? Please explain.

(d) If the changes in the drought scenario were to occur outside of a test period, could YEC mitigate these risks by submitting an application to the Board for any necessary adjustments to the LWRF?

(e) Regarding thermal cost risks due to incremental load, are these costs mitigated through increased revenues from existing rates? Please explain why or why not.

(f) If YEC's revenue requirement, based on forecast levels, recovers its forecast costs over forecast volumes, then for the exception of variable costs such as fuel, would incremental revenue above forecast load levels provide a greater net contribution to YEC earnings (assuming no incremental fixed costs)? Please explain.

YEC-YUB-13

Reference: **YEC Technical Session, Notes for Oct. 8, 2019 technical session final.doc, table on page 19**

Issue/sub-issue: **Residual impact of water change borne by YEC**

Preamble: Line 12 of Table 2.1-1, scenario 4 shows an extra cost to YEC of $5.872 million.

Request:

(a) Please provide: (1) the offsetting revenue associated with the incremental load, stating all assumptions; and (2) the increased other variable costs associated with the increased load, stating all assumptions.

(b) Given your response to part (a), show the net impact to YEC.

YEC-YUB-14

Reference: **YEC Technical Session, Notes for Oct. 8-19 technical session final.doc, page 20**

Issue/sub-issue: **Fuel mix**

Quote: In addition to LWRF overall thermal generation assigned to the LWRF at the end of 2018, it is also necessary to address actual diesel/LNG fuel mix relative to the GRA forecast assumption of 90/10 diesel/LNG fuel mix. Fuel mix assessments affect the final costs for thermal generation transfers in or out of the LWRF.

Request:

(a) Must the LWRF contributions to/payments from be set according to forecast fuel mix? Please explain, also providing any other options considered by YEC.

(b) What is the effect of using actual fuel mix in calculating contributions to/payments from the LWRF? Please explain.

YEC-YUB-15

Reference: **YEC Technical Session, Notes for Oct. 8-19 technical session final.doc, page 21**

Issue/sub-issue: **Fuel mix**

Quote: In summary, the detailed fuel mix assessment for 2018 increases the dollar value of the year-end 2018 actual example for the LWRF transfer from $0.722 million in Table 2.1-1 (which assumed the average fuel price of $0.1583/kWh) to $0.922 million (average cost of $0.2022 per kWh). The increase in average cost reflects the high proportion of diesel in the LWRF transfer required to yield a year-end 90/10 LNG/diesel mix for the forecast load thermal generation cost.

Request:

(a) If the actual fuel mix costs are greater than forecast, how and where is this difference accounted for? Please explain using an illustrative example.

(b) If, in response to part (a), the difference is adjusted through the provision to the LWRF, does this mute or amplify any impacts due to low-water (or high-water) events? Please explain.