UTILITIES CONSUMERS' GROUP
Box 9300
29 Wann Road
Whitehorse, Yukon Y1A 4A2
email: rrondeau@northwestel.net

March 14, 2018

Yukon Utilities Board
Box 31728
Whitehorse, Yukon Y1A 6L3

Attention: Mr. Robert Laking, Chair

Re: Yukon Energy Corporation Energy Reconciliation Adjustment (ERA) Filing
UCG Information Requests – ERA Filing Part 2 and YECSIM Model

Dear Mr. Laking:

The Utilities Consumers' Group hereby submits its information requests to Yukon Energy Corporation (YEC) pursuant to Board Order 2018-02 (as amended).

UCG asks that YEC provide responses and attachments in word-searchable PDF and/or Word format. Where responses take the form of tables with underlying calculations, UCG asks that YEC provide the related Excel file as well.

If the Board or YEC requires any clarification with respect to UCG's IRs, please direct all inquiries to me by email at rrondeau@northwestel.net or by phone at 633-5210.

Yours truly,

Roger Rondeau
Utilities Consumers' Group

YUKON ENERGY CORPORATION
ENERGY RECONCILIATION ADJUSTMENT (ERA) APPLICATION AND YECSIM MODEL

Utilities Consumers' Group
Information Request

1) *Reference*: YECSIM Model in GRA Presentation, February 12, 2018, page 5
"Water-Related & Thermal Generation Forecasts"

Request:
(a) Please explain how the YECSIM model incorporates the benefits of other renewable sources of generation like solar and options such as battery storage.
(b) If the YECSIM model does not include the benefits of solar generation, please explain how the model can be updated.

2) *Reference*: YECSIM Model in GRA Presentation, February 12, 2018, page 6
"Change in water from GRA forecast is a ratepayer risk"

Request:
Please explain why YEC does not accept any of the forecast risk related to hydro generation to ensure that YEC is motivated to optimize its forecast model and the use of generation assets.

3) *Reference*: YECSIM Model in GRA Presentation, February 12, 2018, page 8
"Regardless of forecast used, need consistent implementation in GRA and for determining diesel generation costs at each year end."

Reference: December 18, 2017 Alternative GRA Forecast Submission, page 3
"The current level of existing firm rates result in a $3.320 million rate revenue shortfall in 2017, and a $5.881 million rate revenue shortfall in 2018 compared to revenue requirements set out in Tab 3. These shortfalls, which are outlined in Table 1 below, form the basis for the proposed rate increases in this Application."

Request:
(a) Please confirm that, from YEC's perspective, it doesn't actually matter whether you use a short-term forecast or a long-term average forecast as long as there is consistency with forecast and year-end reconciliations.
(b) Please confirm that the forecast revenue shortfalls have been reduced by $2.03 million and $0.7 million in 2017 and 2018 respectively as a result of using the short-term hydro generation forecast.
(c) Please provide specific details of all costs that have been reduced as a result of using the short-term hydro generation forecast.

4) *Reference*: YECSIM Model in GRA Presentation, February 12, 2018, page 9
"History Leading to YECSIM in 2017/18 GRA"

Request:
(a) Please confirm that the mechanisms in place during the 1990s were the result of a negotiated settlement.
(b) Please confirm that there was abundant hydro generation available in the 1998-2011 time period which resulted in the suspension of the DCF.
(c) Please provide a chronological history of the DCF noting the drivers and purposes for additions and withdrawals to the DCF. Please provide explanations for differences in drivers and purposes.
(d) Please provide a schedule showing demand as a percentage of hydro generation available for the years 1997 through 2017.
(e) Please confirm that natural load growth has more than made up for the load lost when the Faro mine ceased operations.

5) *Reference*: YECSIM Model in GRA Presentation, February 12, 2018, page 13
"Fundamentals of YECSIM – Model Overview"

Request:
(a) Please provide an analysis for 2002 – 2017 comparing the YECSIM estimates for hydro and thermal generation with actual levels of hydro and thermal generation.
(b) Please identify and changes that have been made to the YECSIM model since it was developed by the KGS Group in 2008.

6) *Reference*: YECSIM Model in GRA Presentation, February 12, 2018, page 16
"Fundamentals of YECSIM – User Manual Status."

Request:
(a) Please explain why wind generation is removed from load used for YECSIM simulation.
(b) Please confirm that while the YECSIM model does not separate diesel vs. LNG thermal generation, YEC still separates diesel from LNG to alter the model output.
(c) Please explain why the YECSIM model cannot be programmed to separate the types of thermal generation.

7) *Reference*: YECSIM Model in GRA Presentation, February 12, 2018, page 25
"Fundamentals of YECSIM – Methodology."

Request:
(a) Please provide detailed analysis of why abandoning the first 5 load years and the 8^{th} load year results in a more accurate forecast.
(b) Please provide details of who developed this abandoning method.

8) *Reference*: YECSIM Model in GRA Presentation, February 12, 2018, page 29
"Fundamentals of YECSIM – Major Inputs for 2017/2018 GRA"

Request:
(a) Please explain why 35 years is the optimal number if historic inflows to use in the YECSIM model.
(b) Please provide details of any analysis undertaken to determine if more years of inflow will add to or diminish the accuracy of the model.
(c) Please provide analysis that the 35 years of inflows reflects the current trend in climate change impacts.
(d) Please update the YECSIM model results and resulting forecasts using inflows from 1981 – 2017 and 1998 - 2017.
(e) Please provide details of who developed this abandoning method.

9) *Reference*: YECSIM Model in GRA Presentation, February 12, 2018, page 32
"Fundamentals of YECSIM – Major Outputs - 2017/2018 GRA"

Request:
(a) Please explain with analysis why 13 years of load simulations are used for determining long-term averages.
(b) Please provide details of the YECSIM thermal generation split between diesel and LNG for the last 10 years.

10) *Reference*: December 6, 2017 Application, page 2-2
"The ERA was established in 1993, when ST hydro generation forecasts were still being adopted for GRA purposes, as a retrospective payment calculation integrated into the wholesale rate (RS 42), designed to ensure that YECL received a full pass-through of all incremental costs or savings of diesel generation attributable to higher or lower than forecast wholesale demand. As with the DCF and its precedent fund (the LWRF), the ERA was only active during the 1990s when the Faro Mine was in operation which resulted in diesel generation accounting for 100% of any generation change due to firm load changes. The basic requirement for the ERA reflected the material variance per kW.h of wholesale in YEC thermal generation costs (fuel plus variable O&M) versus the RS 42 Energy Charge. Given this variance, YEC required (when the Faro Mine was operating) an ERA mechanism in order to recover a material portion of its incremental diesel generation costs related to an increase in wholesales above GRA forecasts; the ERA mechanism also rebated to YECL the net savings that YEC recovered when wholesales were less than GRA forecasts."

Request:
(a) Please confirm that the ERA was designed assuming that all incremental costs or savings related to diesel generation that are passed-through to YECL (now AEY) would be passed through to YECL's customers. Please explain how these costs or savings are to be passed-through to end-use customers.
(b) Please explain what variable O&M costs would be included in thermal generation costs. Please provide a breakdown of actuals levels of these costs for the most recent year available.

(c) Please confirm that the ERA was not designed to allow YEC to recover a material portion of its incremental diesel generation costs related to an increase in wholesales above GRA forecasts but rather all of the incremental costs.
(d) Please confirm that there is no way for YEC to double-recover variable O&M costs through the ERA mechanism and rates approved by the YUB to recover forecast O&M costs.
(e) Please provide a chronological history of the ERA noting the drivers of each adjustment calculation. Please provide explanations for differences in drivers of each of these ERA calculations.

11) *Reference*: December 6, 2017 Application, pages 2-5
"The PPA Application indicates a potential increase in grid loads over the next decade sufficient to sustain material forecast thermal generation at LTA hydro generation, e.g., prior to any enhanced renewable generation being implemented, incremental YEC LTA thermal generation at 65% to 75% of the incremental generation is needed to supply the VGC mine power requirements."

Request:
(a) Please provide an update on the commencement of the delivery of grid electricity to VGC Group and the percentage of incremental generation will be provided by thermal generation.
(b) Pursuant to Board Order 2015-01 and Order 2015-06, please provide details of when YEC provided the YECSIM model and its results for testing by intervenors and the Board.

12) *Reference*: December 6, 2017 Application, page 2-7
"The final step, following contingency fund implementation, is the determination of the final Yukon Energy thermal generation fuel costs for each fiscal year (i.e., the YEC cost after removing water variability impacts) and the determination of the ERA related to any flow through to AEY of YEC's wholesale net cost changes related to wholesale changes from the GRA forecast."

Request:
(a) Please explain how and to whom YEC provides information related to actual thermal generation fuel costs each year and the ERA calculation.
(b) Please explain why YEC and AEY (and its predecessor YECL) could not agree on an ERA mechanism and how it would be calculated.

13) *Reference*: December 6, 2017 Application, page 2-8
"Regardless of which option is adopted, however, the following are required due to the inter-relationships between GRA forecasts, thermal generation cost or contingency fund account mechanisms, and wholesale rate mechanisms:

- *A thermal cost or contingency fund account mechanism similar to the DCF is required to address actual variances of thermal generation costs in any year from the latest GRA forecast due to water variances from GRA forecasts, whether those forecasts are based on ST or LT hydro; and*
- *A wholesale rate mechanism similar to the ERA is required to ensure, in*

accordance with OIC 1995/90 and the direction of the Court of Appeal, that AEY receives a full pass-through of all incremental YEC costs or savings of thermal generation attributable to higher or lower than forecast wholesale demand."

Request:

(a) Please confirm that the requirements outlined in YEC's evidence are simply the opinion of YEC and have not been determined as requirements by the YUB.

(b) Please confirm that the direction from the Court of Appeal was not to ensure that AEY receives a full pass-through of all incremental costs or savings but that a wholesale rate be set that enables YEC to recover all of its diesel generation costs including any net DCF payment made by YEC attributable to AEY's above-forecast wholesale purchases of electricity.

14) *Reference*: December 6, 2017 Application, page 2-9
"The Board to date has consistently accepted and approved the inter-relationships between hydro generation forecasts as used for GRA purposes and the thermal cost or contingency fund account mechanism needed to address actual variances of thermal generation costs in any year from the latest GRA forecast due to water variances from GRA forecasts."

Request:
Please provide details of all Board Orders in which the YUB specifically approved the inter-relationships between hydro generation forecasts as used for GRA purposes and the thermal cost or contingency fund account mechanism needed to address actual variances of thermal generation costs in any year from the latest GRA forecast due to water variances from GRA forecasts.

15) *Reference*: December 6, 2017 Application, page 2-9
"A fundamental principle of utility rate regulation in Yukon is that ratepayers are to bear the risks related to water variability."

Request:
Please provide specific references to Board Orders or legislation that confirms YEC's claim that ratepayers bearing the risk related to water availability is a fundamental principle of utility rate regulation in the Yukon.

16) *Reference*: December 6, 2017 Application, page 2-10
"Board jurisdiction with regard to Yukon electricity utilities is tied, in the absence of specific directions from the Minister or by OIC, to the determination of rates and related revenue requirements. Accordingly, Board review of how YEC proposes to address the DCF, ERA, wholesale rates and LTA hydro generation forecasts for GRA purposes for the period 2017 forward is tied to Board determinations on rates and related revenue requirements."

Request:
Please confirm that the YUB also has the jurisdiction to: (1) set just and reasonable standards, classifications, regulations, practices, measurements, or services to be observed, provided, or followed by a public utility; (2) determine the areas to which a public utility

shall provide service, and requiring the public utility to establish, construct, maintain, and operate any reasonable expansion of its existing services; (3) determine the conditions that may be imposed by a public utility to establish, construct, maintain, or operate an expansion of its existing services; (4) order and declare the terms of the joint use of utility facilities; and (5) inquire into, hear, and determine any matter or thing respecting the production, transmission, delivery, or furnishing of electricity or gas to the public.

17) *Reference*: December 6, 2017 Application, page 2-11
"Yukon Energy is also not aware of any applicable alternative to the requirement for an ERA wholesale rate mechanism that flows through to AEY the YEC wholesale net cost changes related to wholesale changes from the GRA forecast."

Reference: December 18, 2017 Alternative GRA Forecast Submission, page 5
"As per Order 2017-08, DCF references are removed for the test years; however, as reviewed in Appendix 2.2 of the December 6, 2017 ERA Application, some form of contingency fund account would continue to be required if the Alternative GRA Forecast was to be used to set rates."

Request:
(a) Please confirm whether YEC is aware of the use of deferral accounts that accumulate variances between forecast and actual costs.
(b) Is YEC aware of any jurisdiction where a deferral account is used to track the difference between forecast and actual costs of generation?
(c) Is YEC aware of the Global Adjustment mechanism used on Ontario?
(d) Please explain how Yukon ratepayers would benefit from "some form of contingency fund account" that YEC has determined is required.

18) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, pages 2-6 and 2-17
"Firm wholesales for 2017 are forecast in Table 2.1 at 309.0 GW.h, which is 8.7 GW.h higher than the original AEY GRA forecast for 2017 and 4.7 GW.h lower than the AEY Compliance Filing forecast in response to Board Order 2017-01. This forecast reflects forecast AEY grid firm load at 317.6 GW.h less forecast AEY long-term average generation at 8.6 GW.h."

Reference: December 18, 2017 Alternative GRA Forecast Submission, page 2-13
"It is assumed in the Alternative GRA Forecast that 60% of ST thermal generation requirements as forecast for the test years will be met by natural gas generation supplied by liquefied natural gas (LNG), with the balance (40%) supplied by diesel generation. This assumption reflects the tendency for diesel generation to dominate smaller and shorter duration thermal generation, and the lack of any useful additional assessments as to forecast allocation for each test year. There is considerable risk, absent any change in the forecast total Firm Load Generation, that the LNG/diesel allocation in each test year could be very different than assumed in this Alternative GRA Forecast."

Request:
(a) Please provide updated Tables 2.1 and 2.2 showing 2017 actuals and an updated 2018 forecast.

(b) Please provide and explain the analysis which resulted in the split of thermal generation changing from 90/10 LNG/diesel to 60/40 LNG/diesel and the impact this had on costs.

19) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 2-15
"The forecast dependable capacity shortfall based on the single contingency (N-1) criterion is forecast at 7.6 MW for 2017 and 8.7 MW for 2018."

Request:
Please provide the actual dependable capacity shortfall for 2017 and an updated forecast for 2018.

20) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-2
Table 3.1: Yukon Energy Revenue Requirement

Request:
Please provide an updated Table 3.1 showing 2017 actuals and any updated 2018 forecast.

21) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-4
Table 3.2: Fuel and Purchased Power

Request:
Please provide an updated Table 3.2 showing 2017 actuals and any updated 2018 forecast.

22) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-6
Table 3.3: Non-Fuel Operating and Maintenance Expenses

Request:
Please provide an updated Table 3.3 showing 2017 actuals and any updated 2018 forecast.

23) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-7
Table 3.4: Employee Complement History

Request:
Please provide an updated Table 3.4 showing 2017 actuals and any updated 2018 forecast.

24) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-9
Table 3.5: Production Costs

Request:
Please provide an updated Table 3.5 showing 2017 actuals and any updated 2018 forecast.

25) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-10
Table 3.6: Transmission Costs

Request:
Please provide an updated Table 3.6 showing 2017 actuals and any updated 2018 forecast.

26) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-11
Table 3.6.1: Brushing Costs

Request:
Please provide an updated Table 3.6.1 showing 2017 actuals and any updated 2018 forecast.

27) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-12
Table 3.7: Distribution Costs

Request:
Please provide an updated Table 3.7 showing 2017 actuals and any updated 2018 forecast.

28) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-12
Table 3.8: General Operating and Maintenance

Request:
Please provide an updated Table 3.8 showing 2017 actuals and any updated 2018 forecast.

29) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-14
Table 3.9: Administration

Request:
Please provide an updated Table 3.9 showing 2017 actuals and any updated 2018 forecast.

30) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-15
Table 3.10: Insurance and Reserve for Injuries and Damages

Request:
Please provide an updated Table 3.10 showing 2017 actuals and any updated 2018 forecast.

31) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-16
Table 3.11.1: RFID Continuity Schedule

Request:
Please provide an updated Table 3.11.1 showing 2017 actuals and any updated 2018 forecast.

32) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-17
Table 3.12: Property Taxes

Request:
Please provide an updated Table 3.12 showing 2017 actuals and any updated 2018 forecast.

33) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-18
Table 3.13: Mid-Year Net Rate Base

Request:
Please provide an updated Table 3.13 showing 2017 actuals and any updated 2018 forecast.

34) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-19
Table 3.14: Depreciation and Amortization

Request:
Please provide an updated Table 3.14 showing 2017 actuals and any updated 2018 forecast.

35) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-21
Table 3.14.1: Hearing Cost Reserve Account Continuity Schedule

Request:
Please provide an updated Table 3.14.1 showing 2017 actuals and any updated 2018 forecast.

36) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-21
Table 3.14.2: Deferred Vegetation Management Continuity Schedule

Request:
Please provide an updated Table 3.14.2 showing 2017 actuals and any updated 2018 forecast.

37) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 3-22
Table 3.15: Reserve for Site Restoration Continuity Schedule

Request:
Please provide an updated Table 3.15 showing 2017 actuals and any updated 2018 forecast.

38) *Reference*: December 18, 2017 Alternative GRA Forecast Submission
Appendix 3.3 – Key Performance Indicators

Request:
Please provide updates to all tables and charts in this report that show 2017 actuals and any updated 2018 forecast.

39) *Reference*: December 18, 2017 Alternative GRA Forecast Submission
Appendix 3.5 – Diesel Contingency Fund ("DCF") 2016 Annual Report

Request:
Please provide the 2017 DCF Annual Report.

40) *Reference*: December 18, 2017 Alternative GRA Forecast Submission, page 4.2.4
Figure 4.2A-2 - Residential Electricity Bill in Comparison to Yukon

Request:
(a) Please explain how Figure 4.2A-2 is useful to the YUB in deliberating the request made in the current GRA application.
(b) Please provide details of the generation mix for each of the locations identified on this chart.
(c) Please provide an updated Figure 4.2A-2 which includes all applicable rate relief and taxes for each of the locations identified on this chart.

41) *Reference*: December 18, 2017 Alternative GRA Forecast Submission
Tab 5 – Capital Projects

Request:
Please provide updates to Tables 5.1 through 5.8 showing 2017 actuals and any updated 2018 forecast.

42) *Reference*: December 18, 2017 Alternative GRA Forecast Submission
Tab 7 – Financial Schedules

Request:
Please provide updates to all schedules in Tab 7 showing 2017 actuals and any updated 2018 forecast.

43) *Reference*: December 18, 2017 Alternative GRA Forecast Submission
Tab 9 – 2015 Audited Financial Statements

Request:
Please provide YEC's 2016 Audited Financial Statements.

44) *Reference*: June 22, 2017 Application, page 1
YEC states "Pursuant to the Order in Council (OIC) 2014/23 direction, the Board must ensure until the end of 2018 that rate adjustments for retail customers and major industrial customers apply equally, when measured as percentages, to all classes of retail customers and to the class of major industrial customers. Consequently, for both 2017 and 2018, all proposed rate adjustments for retail customers and industrial customers apply equally, as percentages".

Reference: December 11, 2017 IR Responses, VGC PPA, UCG-YEC-1-13(c)
"YEC is not specifically prohibited from conducting a fully allocated cost of service (COS) analysis, subject to securing from AEY the information needed for completing a consolidated COS for all Yukon including both YEC and AEY facilities and customers."

Request:
(a) Please confirm that there is no cost of service analysis underlying current wholesale rates charged by YEC.
(b) Please confirm that the revenue-to-cost ratio related to YEC's wholesale rate class is not currently known.