ATTACHMENT 1

YUKON ENERGY REVIEW OF THE YUKON ELECTRICAL JANUARY 2014 PROPOSALS TO CHANGE THE DCF AND/OR ERA

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1.1 SUMMARY OF YUKON ELECTRICAL PROPOSALS

Yukon Electrical has two proposals in its submission to change the DCF and/or ERA:

1. **Diesel Deferral Account for YEC:** Termination of the DCF and ERA, to be replaced by a new YEC diesel deferral account (with no resulting direct charges to YECL). As described by YECL, "a basic outline of the deferral follows:

    A. Determine diesel revenues recovered by YEC rates.
    B. Determine actual diesel costs.
    C. Take the difference between (A) & (B) and either deposit or withdraw from the deferral account."[1]

2. **No ERA Charge to YECL:** If it is determined that an ERA should be charged to YECL, 100% of the ERA should flow through to all Yukon ratepayers and on this basis the ultimate recovery of the outstanding deferral "is better served being administered by YEC"[2] (i.e., with no resulting direct charges to YECL and termination of the ERA as it currently exists).

Yukon Energy's January 31, 2014 filing provided two options for the ERA based on YECL concerns and position regarding the ERA, and thus issues related to YECL's "no ERA charge to YECL" proposal have already been addressed, including the benefits to ratepayers that occur under YEC's proposed Option A.

Yukon Electrical's proposal for a diesel deferral account for YEC is reviewed below, focusing on the impact of this proposal in terminating the DCF.

1.2 UNDERSTANDING YECL'S PROPOSAL FOR YEC DIESEL DEFERRAL ACCOUNT

Yukon Electrical's January 31, 2014 Filing provides no detail or example to help explain how the deferral account would be administered, but simply notes that "The proposal above was submitted to YEC during the utilities' discussions[3]". As no supporting detail or explanation was included in the proposal, the Board and other parties are left to interpret an approach based on the wording provided without any guidance.

Yukon Electrical does not provide any further detail or examples regarding the mechanics of the proposed new deferral account or how it would operate. The only guidance offered is that YECL believes "the mechanism to address diesel volume variances must adhere to the following principles:

1. Simple, transparent, easily explainable and easily testable;

[1] YECL January 31, 2014 Filing, cover letter, page 7.
[2] YECL January 31, 2014 Filing, cover letter, page 8.
[3] YECL January 31, 2014 Filing, cover letter, page 7

2. Allow a utility to recover its prudently-incurred costs;
3. Based on actual data and relates to all fuel volume variances on the interconnected system;
4. Dispersed in a timely manner, so as not to mask market signals in times of drought or flood and to avoid intergenerational inequity; and
5. The deferral account balance thresholds that trigger the disposal should be set at a reasonable level so as to not cause undue rate changes or rate impacts to customers." [4]

Yukon Energy's January 31, 2014 filing notes (at page 3) that in September 2013 YECL had proposed "a simple new deferral account for YEC that would effectively remove the water-related considerations that form the essential foundation for the DCF (i.e., a fund to protect ratepayers against large variations in rates over the long-term due to fluctuations in hydro generation), and establish a new short-term deferral account mechanism to recover changes in YEC diesel generation (regardless of cause) for approved forecasts." The current YECL proposal continues to reflect all of these features.

Although not clear from YECL's January 31, 2014 filing, Yukon Energy's understanding is that Yukon Electrical's diesel deferral account proposal for YEC includes the following key features (see Appendix 1-B to YEC's Supplementary Filing for analysis of 2012 and 2013 impacts of the YECL diesel deferral account compared with the YEC DCF proposal):

1. **"diesel revenues recovered by YEC rates"** - YEC understands that this is defined by YECL as the average volume of diesel generation (as a percent of grid sales) included in approved rates, or approximately 2.1% for YEC's 2012 GRA as approved[5], without regard to how the diesel amounts included in current YEC rates were in fact determined (assuming forecast long-term average hydro generation available at the forecast grid generation level).

2. **"actual diesel costs"** - YEC understands that this is defined by YECL as actual YEC diesel generation, without regard to the fact that YEC's "actual diesel costs" as reflected in its accounts are currently determined in any year based on long-term average hydro generation (not actual hydro generation) requirements at the actual grid generation level in that year, i.e., under the proposed DCF in YEC's filing, the difference in diesel generation costs between actual and long-term average requirements is the amount that goes into (or comes out of) the DCF such that in 2012 and subsequent years YEC's "actual diesel costs" are based on long-term average hydro generation.

Appendix A (page 7) of the Yukon Electrical filing states that its deferral account concept is similar to that approved and used by Northlands Utilities for its hydro rate zone. Although the referenced deferral account did use diesel as a percent of overall generation, Appendix 1-A to YEC's Supplementary Filing

[4] YECL January 31, 2014 Filing, Appendix A page 7.
[5] YECL January 31, 2014 Filing, excel file, "Support" tab, line 5 shows "% Fuel included in wholesale rate at GRA Forecasts" as 2.1% for 2012 based on GRA Fuel forecast of 7,926 MW.h and Forecast Total Grid Sales at 373,095 MW.h [the reference provided by YECL is not accurate - the total forecast grid sales shown here come from YEC's Compliance Filing).

shows why reference to this example from NWT addresses a very different situation that is not relevant to the Yukon Energy situation or the DCF.

1.3 ISSUES WITH YECL'S PROPOSAL FOR YEC DIESEL DEFERRAL ACCOUNT

Overall, the Yukon Electrical proposal to terminate the DCF and replace it with a new diesel deferral account ignores the basic and long established principles for setting diesel costs charged to YEC under the DCF, and also ignores the approved basis for charging diesel costs to ratepayers under YEC's current approved rates.

The following are noted with regard to how YEC's diesel costs are determined under the DCF as proposed in YEC's January 31, 2014 filing:

- In YEC's 2012/13 GRA, the YUB approved YEC forecast diesel generation (GW.h) and diesel generation costs ($000) based on long-term average (LTA) hydro generation determined using the YECSIM model[6]. Based on Order 2013-04, diesel generation was included in rates for 2012 at 7.926 GW.h and for 2013 at 11.006 GW.h (reflecting the total YEC generation as then forecast). These are the diesel costs actually included in rates.

- Diesel generation fuel costs at 100% LTA related to any incremental growth above GRA approved forecasts in any year are also charged to YEC under the DCF as proposed in YEC's January 31, 2014 filing, regardless as to actual diesel generation that occurs in any year. This reflects long-standing principles under the DCF and YEC's prior Low Water Reserve Fund, i.e., when the DCF is activated, YEC's actual costs for diesel in any year reflect GRA approved diesel generation forecasts based on specified water forecast assumptions, and not actual YEC generation.

- The difference in cost between forecast diesel and actual diesel generation in any year at any given level of grid generation reflects only the variance in water availability (hydro generation) relative to the forecast, and this difference is what goes into or comes out of the DCF. Funds are held in the DCF to protect ratepayers against adverse and material rate impacts at such time as drought or low water conditions act to severely reduce hydro generation and thereby require increased diesel generation on the grid.

- Based on the principles approved for forecast hydro generation in the last GRA (i.e., LTA hydro generation[7]), forecast diesel generation at actual annual grid generation levels is currently to be

[6] Order 2013-1, para 60 the Board directs "YEC to base its hydro and diesel energy requirements on 100 percent of long-term average hydro generation for the forecast load in its compliance filing".
[7] Order 2013-1 at para 240 cites YEC's Argument as follows: "The Application's forecast diesel generation reinstates the need for DCF measures to enable rates to recover diesel fuel and O&M costs based on LTA hydro generation rather than forecast actual diesel generation. Customer rates and YEC's diesel generation expenses are therefore once again to be based on forecast long term average ("LTA") diesel generation requirements related to actual grid loads rather than on YEC diesel generation requirements that fluctuate in response to changes in annual YEC hydro or wind generation availability".

determined in any year for the DCF calculations based on LTA hydro (and wind) generation for actual grid generation requirements (and not on forecast actual hydro generation)[8]. As reviewed in the 2012/13 GRA (and other filings with the YUB in recent years[9]), the annual LTA hydro generation as determined using the YECSIM model varies as annual grid generation levels vary.

In contrast, the Yukon Electrical proposal strips out water related considerations regarding any fund to protect ratepayers against big variances in rates due to water fluctuations and establishes a new mechanism to recover changes in diesel generation (regardless of cause) from approved forecasts:

- The YECL proposal does not address issues related to water variability or the fact that YUB approved rates for the 2012/13 GRA were based on LTA hydro generation.

- YECL is proposing a simple deferral account to address diesel variance from forecast due to any factor (e.g., customer load changes, risk events that result in added diesel, as well as water changes) - as such, YECL's proposal is not limited to the hydro grid, but would in principle apply to all diesel costs in all rate zones.

- YECL's standard for what the utility pays (or recovers) is not based on the gap between actual diesel and LTA diesel, but on the gap between actual diesel and a new concept called "% Fuel included in rates":

    - The YECL proposal assumes that "%Fuel included in rates" is 2.12%[10] in 2012 (the diesel volume in GRA as percent of grid sales forecast in GRA); this proposal has no impact if sales are exactly the same as GRA forecast; however, any increase in sales above forecast in 2012 would result in added cost to YEC for added diesel estimated at only 2.12% of the sales variance;

    - In contrast, under the DCF, YEC is charged for added diesel based on growth in LTA requirements for diesel due to generation growth (in 2012, YEC's proposal [Table 2] has YEC charged 40.5% for increased LTA diesel related to increases in grid generation [which includes impact of added generation losses on top of added grid sales]);

    - It is readily apparent that there is a very big difference in 2012 between the proposed DCF and YECL's proposal as regards 2012 funds going into the DCF to protect ratepayers against future drought impacts, i.e., the YECL proposal results in payments into the DCF in 2012 related to increased grid generation (above GRA forecast) at less

[8] 2012/2013 GRA Table 2.2 provides for each test year the existing diesel forecast (based on what would actually be expected in each test year) and the long term average diesel forecast for each test year. Pages 3-4 and 3-5 note "As reviewed in Section 2.3.2, diesel generation requirements included for the test years are forecast to exceed short-term forecast requirements (which include currently favourable stored water conditions)".
[9] The Mayo Part 3 Application and the 2009 Phase II Rate Application analysis subsequent to the Yukon Energy 2008/2009 GRA indicated that approximately $1 million in diesel generation costs would have been included in rates in 2009 if rates had been set to reflect long term average hydro capability at that time and the related long term average diesel generation requirement approximately 4 GW.h at then forecast 2009 loads.
[10] YECL January 2014 Filing, Table 3.1 Excel File.

than 10% of what is proposed in the YEC filing based on actual generation requirements in that year.

- Aside from reducing ratepayer protection against future drought-related costs, the YECL deferral account proposal will similarly understate the extent to which growth in loads is resulting in growth in LTA diesel generation costs that need to be recovered from ratepayers. In other words, at LTA water conditions YECL's proposal will not track changes in thermal generation costs that occur when grid load levels change.

- The reduced longer term protection for ratepayers will increase rate instability related to changes in water conditions on the grid.

- To understand the material changes involved in the YECL proposal relative to long standing principles associated with the DCF, it is useful to look back to when the Faro mine was operating and changes in loads had a 100% impact on diesel generation requirements under normal water conditions:

  - YEC at that time under the DCF paid full diesel cost for any growth variance in load beyond forecast [DCF payment then depended on actual diesel versus what YEC had to pay], and therefore YEC's payment covered the full incremental diesel cost of load growth;

  - However, under YECL's new diesel deferral proposal YEC would have paid added diesel costs related to growth above load forecast based only on <u>average</u> diesel requirements as a percent of grid sales, and therefore at only a fraction of that load growth (about 28% based on the 1996 GRA); the net impact would mean that ratepayers, not YEC, must pay for the balance of added diesel cost at LTA through the deferral account [would mean that all ratepayers at that time would have typically faced rider charges for over 70% of added diesel costs when water flows were at or less than LTA] even though YEC would have retained 100% of revenues from the added sales that exceeded GRA forecasts.

The approach advanced by YECL also indicates that the account should be disbursed in a timely manner. However, "timely disbursal" is not aligned with the underlying purpose that a DCF-type account serves, i.e., the point of having a DCF is to establish and build a fund that is available to stabilize rates when there is material variation in water availability. During higher than average water years the fund is built up and during lower than average water years the fund is drawn down in order to stabilize rates and reduce impacts on ratepayers from drought events. Timely dispersal would prevent the fund from being built up and available to stabilize rates during low water years.

Similarly, YECL's proposal to minimize thresholds that trigger dispersal of deferred funds fails to reflect the purpose of a DCF versus a normal deferral account for other costs. Given the purpose of the DCF, and the potential added thermal generation costs that could today be incurred under drought conditions, ratepayer protection is not advanced by proposals to minimize the thresholds for the DCF balances.

1.4 PURPOSE OF THE DCF AS A RATE STABILIZATION MECHANISM

Overall, the YECL proposal fails to recognize the differences between the DCF and a normal deferral account.

The Diesel Contingency Fund was created as a result of the Negotiated Settlement at the 1996/97 GRA and was to operate in the same manner as the earlier Low Water Reserve Fund (LWRF).

The question as to why a DCF (or similar rate stabilization mechanism) is needed was reviewed in 1999 and summarized in a letter by Yukon Energy to the Yukon Utilities Board (based on an excerpt from a report to the YUB in April 1997 prepared by the Accounting firm Stephen Johnson):

> "In certain jurisdictions, electric power is generated at hydro dams or run-of-the-river hydro operations. Low Water Reserves have been established to protect customers against short term fluctuations in the cost of electricity when more costly sources of generation, such as diesel, are substituted for hydro generation at times of low water conditions behind the dams or in the rivers. Simply, lower than average water level conditions generally result in higher diesel generation costs…"
>
> "Given that the reserve is a vehicle for smoothing the cost fluctuations due to water level divergence from average, it is set up so that it can be drawn down to offset the costs of diesel generation in years of low water levels."

The same letter notes that "the DCF is set up so to replenish in years of high water levels. The result is better rate stability and predictability for both customers and utilities."

Historically, both the DCF and the earlier Low Water Reserve Fund (LWRF) were implemented to address variances in the cost of diesel generation related solely to hydro generation variations from GRA approved forecasts that are due to hydro capability variances (e.g., water flows variances). The LWRF and DCF did not address other reasons for diesel generation cost variances (e.g., neither the LWRF nor the previously approved DCF addressed diesel generation cost variances from forecasts due to fluctuations in sales or overall generation requirements[11], variances in fuel prices, or variances in diesel plant efficiencies or average O&M costs per kWh).

The YECL proposal does not in any way address water variability and as a result ratepayers would be subject to much greater rate instability related to water conditions.

[11] The LWRF and DCF included provision for "expected diesel" at varying grid loads and thereby ensured that actual diesel generation would be compared against "expected diesel" generation that would apply to actual grid loads. The proposed DCF in essence retains similar provisions to ensure that, when carrying out the DCF determinations in any year, actual diesel generation is compared with "expected diesel" applicable to the actual grid loads that occur.

1.5 IMPACTS ON TRADITIONAL RISK SHARING RELATIONSHIPS IN YUKON

YECL's proposal would fundamentally change how all diesel-related forecast risk is managed in Yukon (see Table 1-1 for review of these traditional risk sharing relationships), and in effect seeks to replace the DCF with a diesel deferral account that:

- At a basic level the proposal submitted by YECL would provide the basis for each utility to have a diesel deferral account that would fully protect and insulate each utility from any diesel related forecast risk, regardless of the cause; and

- In contrast, as reviewed above, the proposal submitted by YECL would do nothing to manage on behalf of ratepayers the fundamental concerns regarding rate instability due to water variability on a predominantly hydro-based system.

Historically, each utility has carried the risk for increased or decreased costs due to changes in the load compared to GRA forecasts and specifically with regard to load changes, equipment availability (i.e., unexpected maintenance or outages, except where such charges are appropriately part of insurance claims or uninsured losses) and generator efficiency.

In effect, through Yukon Energy's rates and through the current proceeding, YECL is seeking to change the basis of risk sharing in Yukon so that the ratepayers and not the utility hold all risk related to variations in load from forecast. This is not only outside of any Yukon precedent, it is also not aligned with most other utilities in Canada.

Table 1-1: Traditional Diesel-Related Regulatory Risk Sharing Relationships in Yukon

	Factors that affect diesel generation requirements	Ability to Forecast	Who carries risk for forecast inaccuracy	How is Risk Addressed
1.	Fluctuation in diesel price from GRA forecast	Each utility provides a diesel price forecast for the test years; actual fuel prices may vary considerably from forecast due to volatile market conditions that are outside the utility's ability to forecast.	Ratepayers	Rider F and Diesel Fuel Price Variance Account (DFPVA)
2.	Availability of water and or/ wind	Each utility provides a forecast of expected LTA hydro generation; actual hydro generation may vary considerably from forecast depending on water availability in a given year.	Ratepayers	Diesel Contingency Fund
3.	Volume of interconnected grid sales	Each utility forecasts the volume of sales in GRA test years.[1]	Utilities	Utility forecast risk
4.	Location of load (line losses)	Each utility provides forecast of line losses in test years.	Utilities	Utility forecast risk
5.	Operation of system	Each utility provides sales and generation forecasts based on its knowledge regarding how the system is expected to operate.	Utilities	Utility forecast risk
6.	Unexpected event/ loss	Not forecastable.	Ratepayers	Reserve for injuries and damages (RFID) and insurance.

Notes

1. Yukon Electrical in the table at page 7 of Appendix A of its filing indicates that it "has the ability to forecast its sales and associated purchase power but does not prepare a GRA-quality forecast on an annual basis for the purposes of Yukon Energy GRAs."

APPENDIX 1-A

TALTSON DAM DEFERRAL ACCOUNT EXAMPLE

APPENDIX 1-A - TALTSON DAM DEFERRAL ACCOUNT EXAMPLE

Appendix 1-A of YECL's submission notes that YECL's proposed deferral account concept "is similar to that approved and used by Northland Utilities (NWT) Limited for its hydro rate zone, except that in Northland's case diesel generation is not used to supplement hydro supply but to replace it when it is not available due to maintenance or forced outage of the hydro supply tie-line".[1] The YECL submission provides no further detail regarding the mechanics of the Northland Utilities (NWT) deferral account.

NUL-NWT serves the Hay River System primarily using electricity purchased from the Northwest Territories Power Corporation's Taltson hydro-electric system. Installed hydro generation on the Taltson system is substantially higher than current loads on the Taltson system such that annual variation in Hydro due to high water or low water conditions has historically not been an issue and is not an issue at this time[2.] Therefore, diesel generation on the Taltson system (including NUL-NWT's Hay River system) is presently only required during maintenance shutdowns of the Hydro facility or during transmission outages. While a rate stabilization fund was established for the Taltson system to address variation in water availability, NTPC's 2001/03 Phase I GRA resulted in the deactivation of the water stabilization fund for Taltson.

A review of available information indicates that a deferral account was approved for Northland Utilities (NUL-NWT) by the Northwest Territories Public Utilities Board (NWT PUB) as part of a 1995/97 negotiated settlement.

- The deferral account did not address diesel generation requirements due to hydro generation variances based on fluctuating water levels, but was focused on diesel generation requirements due to maintenance at the Taltson hydro facility or due to transmission outages.

- The NUL-NWT 2008-10 GRA[3] noted that, subject to Board approval, the variance between actual and forecasted fuel costs associated with operating the Hay River generation facilities for a level of generation that is greater or less than the 4.1% of total supply were to be recovered from, or refunded to, customers through the Diesel Generation Rider (Rider I[4]). Table 1 on page 4-3 of NUL-NWT's 2008-10 GRA indicates that the 4.1% was calculated based on the average share of the diesel generation from total supply over 5 years (2002-2006)[5].

[1] YECL January 2014 Filing, Appendix A, page 7.
[2] The nameplate capacity of the plant is 18 MW. According to NTPC's last GRA, the 2013/2014 test year had a forecast demand of 65.9 GW.h and Peak load of 13.4 MW in). The total available generation from Taltson Hydro plant is approximately 91.7 GW.h (assuming a load forecast for the Taltson zone of approximately 58%).
[3] NUL-NWT 2008-10 GRA, Pages 4-6.
[4] The rate schedule available from NUL-NWT shows that Rider I closed effective November 1, 2013 and future variances related to Hay River (Hydro) diesel generation administered under the Fuel Cost Adjustment Rider, Rider A. http://www.northlandutilities.com/NR/rdonlyres/3B47F517-C656-401C-9201-FC3AE1CB15C5/0/2014_06_01_NWT_Rate_Schedules.pdf
[5] Both the Diesel Fuel Price Variance and Hay River Diesel Generation Variance are refunded to or collected from customers through the new Fuel Cost Rider (updated Rider A) as directed by the Board's Decision 5-2012 (Directive 3).

The Taltson Dam deferral account example is not an apt comparison and cannot be referenced as an example of a deferral account that would work for the Yukon system to address the issues related to water variability that are addressed by the DCF. The following facts are noted in this respect:

1. The 1995/98 Negotiated Settlement established separate Water Stabilization Funds for the Snare Yellowknife Zone and the Taltson Zone. These funds were separate from the fuel stabilization funds established "in recognition that from year to year there may not necessarily be any direct relationship between fluctuations in water levels and variance in fuel expense." While the Snare Yellowknife Water Stabilization Fund was active, the Taltson Water Stabilization Fund was inactive and long term average hydro was not established for the Taltson system[6].

2. Installed hydro generation on the Taltson system is substantially higher than current loads on the Taltson system and therefore there is presently no need for a mechanism to address rate impacts related to fluctuations in water levels.

3. The requirement for diesel generation on Taltson relates to shutdowns due to maintenance at the Hydro facility or transmission outages. This is not equivalent to the situation in Yukon.

[6] The NTPC 2001/02 and 2002/03 GRA, page 8-2 notes, "The Taltson Water Stabilization Fund is not in operation due to the fact that the parties to the Negotiated Settlement did not establish an annual average hydro generating parameter similar to the 177 GW.h parameter established for the Snare Yellowknife Zone. In any event, the level of surplus hydro available on the Taltson Hydro System is so large at this time that there is no need to establish a Taltson Water Stabilization Fund to deal with variance in water level from year to year".

APPENDIX 1-B

YEC DCF AND YECL DEFERRAL ACCOUNT IMPACTS 2012 & 2013

APPENDIX 1-B - YEC DCF and YECL DEFERRAL ACCOUNT IMPACTS 2012 & 2013

Yukon Energy Proposed DCF account impacts in 2012 and 2013

The YEC filings provide the following for YEC refunds to the DCF in 2012 and 2013 based on actual generation for each year[1]:

- 2012 - YEC to refund DCF $3.715 million;
  - expected YEC diesel generation at 15,622 MW.h [7,696 MW.h above GRA forecast, or 40.5% of amount (18,987 MW.h) by which actual YEC generation [ex. secondary] above GRA forecast]
  - actual diesel generation at 2,683 MW.h,
  - results in YEC diesel to be included in DCF of 12,939 MW.h at 28.71 c/kW.h
- 2013 - YEC to refund DCF $3.518 million
  - expected YEC diesel generation at 13,291 MW.h [2,285 MW.h above GRA forecast, or 82.0% of amount (2,786 MW.h) by which actual YEC generation [ex. secondary] above GRA forecast][2]
  - actual diesel generation at 1,037 MW.h,
  - results in YEC diesel to be included in DCF of 12,254 MW.h at 28.71 c/kW.h

Yukon Electrical Proposed Diesel Deferral account impacts in 2012 and 2013

The impact of the YECL deferral account proposal in 2012 and 2013 is estimated as follows based on YEC's current understandings of what YECL is proposing:

- 2012 - YEC to refund new Diesel Deferral Account $1.609 million;
  - % Fuel Included in Rates at 8,288 MW.h [2.124% of total actual YEC grid sales of 390,125 MW.h; the % fuel in rates based on GRA forecasts of YEC diesel at long-term average hydro and YEC grid sales]
  - actual diesel generation at 2,683 MW.h,
  - results in YEC diesel to be included in deferral account of 5,604 MW.h at 28.71 c/kW.h
- 2013 - YEC to refund DCF $2.874 million
  - % Fuel Included in Rates at 11,048 MW.h [2.873% of total actual YEC grid sales of 384,518 MW.h; the % fuel in rates based on GRA forecasts of YEC diesel at long-term average hydro and YEC grid sales]
  - actual diesel generation at 1,037 MW.h,
  - results in YEC diesel to be included in DCF of 10,011 MW.h at 28.71 c/kW.h

[1] YEC's January 31, 2014 filing provided actuals for 2012 and preliminary estimates for 2013. YEC's letter to the Board of April 4, 2014 provided actuals for 2013 (Appendix A and B).

[2] The 2013 change in expected diesel from GRA reflects special impacts due to no WHCT load in 2013 (see footnote #6 to Table 2 in January 31,2014 YEC filing).

Comparison of Impacts

In summary, the YECL deferral account compared to the proposed DCF would result in lower charges to YEC for diesel generation costs in 2012 and 2013:

- in 2012, $2.106 million lower charges to YEC (charge at 43% of proposed DCF deposit).
- in 2013, $0.644 million lower charges to YEC (charge at 82% of proposed DCF deposit).

If actual YEC generation and grid sales were the same as GRA forecasts, no material difference would be expected between the YECL deferral account and the YEC DCF impacts, i.e., the determinations in each case would basically reflect actual diesel versus diesel as forecast in the GRA based on 100% of long-term average hydro generation.

The above differences for 2012 and 2013 reflect different treatment of expected diesel generation when actual generation or grid sales for YEC vary from GRA forecasts.

- YEC: Proposed DCF - new diesel generation is estimated at 40.5% of generation variance in 2012 and 82.0% of generation variance in 2013:
    - The proposed DCF estimates expected diesel generation for any change in grid generation based on long-term average hydro generation, i.e., consistent with the approach adopted in the approved GRA forecast for estimating expected diesel requirement at forecast generation.
- YECL; Proposed Deferral Account - new diesel generation is estimated at 2.124% of grid sales variance in 2012 and 2.873% of grid sales variance in 2013
    - The proposed percentages only reflect the overall level of diesel generation as a share of all generation in GRA forecasts, i.e., diesel remains a small share of overall grid generation
    - The proposed percentages do not reflect the expected added diesel generation needed (with long-term average hydro generation) to meet <u>incremental</u> increases in grid generation.

ATTACHMENT 2

YUKON ENERGY REVIEW OF YUKON ELECTRICAL JANUARY 2014 ASSERTIONS REGARDING YUKON ENERGY'S DCF/ERA PROPOSAL

ATTACHMENT 2: YUKON ENERGY REVIEW OF YUKON ELECTRICAL JANUARY 2014 ASSERTIONS REGARDING YUKON ENERGY'S DCF/ERA PROPOSAL

This Attachment addresses and corrects a number of assertions provided in the January 31, 2014 Yukon Electrical submission regarding Yukon Energy's proposal.

Assertion that confuses forecast diesel based on LTA hydro with forecast of actual diesel generation in test years

The YECL submission asserts that diesel based on LTA hydro generation (as used for DCF) is intended to be a forecast of actual diesel generation expected to occur in the test years. This assertion is incorrect.

Specifically, the following assertion is made:

> "for 2012 & 2013, Yukon Energy used significantly less diesel generation than was forecast and included in Yukon Energy's rates. Despite the fact that Yukon Energy would have already had substantial savings over the forecast on diesel costs, they are proposing an additional recovery of simulated diesel costs is appropriate[1]."

It is not correct to infer that Yukon Energy "had substantial savings over the forecast on diesel costs" in 2012. In fact, as a result of higher than forecast generation (largely resulting from wholesales to YECL being higher than in the approved forecast), YEC incurred actual diesel charges (under the proposed DCF) that were materially higher than approved in the forecast used to set rates:

- Annual long-term average hydro generation for the Integrated System is estimated based on currently installed generation, test year grid load forecasts, and existing water licences, using 28 water years of record; as such, long-term average hydro generation reflects the average of all known water conditions rather than a short-term forecast of generation expected in the two specific test years based on current water conditions. This difference was reviewed in YEC's 2012/13 GRA submissions, along with estimates of the material difference at that time between LTA forecast and the short-term forecast for diesel generation in these years.

- Under the DCF approach in place since the 1990s, variances in actual diesel generation from forecast diesel generation are not included in Yukon Energy's income, but are accounted for by deposits to or withdrawals from the diesel contingency fund. Where diesel is less that the forecast amount included in the GRA due to higher than LTA hydro generation, the difference

[1] YECL January 2014 Filing, Appendix A, Page 5.

is charged to YEC and deposited in the diesel contingency fund (i.e., it is retained for the benefit of ratepayers in future years and is not taken into YEC income).

Assertion that YEC's proposed ERA calculation is not based on actual costs incurred by YEC

YECL also incorrectly asserts that the ERA calculation is not based on actual costs incurred by YEC. Using this incorrect assertion YECL then seeks to refute the fact that Yukon Energy's ERA proposal is consistent with OIC 1995/90.

Specifically, the following assertion is made:

- "YEC's proposed ERA calculation is not based on actual costs incurred; instead, the calculation is based on a derived variance cost from an untested simulator." (cover letter, page 4)

Contrary to YECL's assertion, any charges that YEC proposes to include in the proposed ERA will reflect actual charges that YEC will have incurred under the DCF as proposed.

Order 2013-1 directed Yukon Energy to reflect 100% long term average hydro generation in calculating test year diesel generation requirements for each test year. With approval and implementation of a DCF mechanism based on 100% LTA, YEC in fact incurs diesel generation costs at 100% LTA based on actual generation in any year, i.e., diesel generation fuel costs at 100% LTA related to any incremental growth above GRA approved forecasts in any year will be charged to YEC.

Assertions regarding the "accuracy" of the YECSIM Model

YECL's criticisms regarding the YECSIM model confuse the concept of LTA forecasts that are generated with the YECSIM model, with short term forecasts of actual diesel generation based on current water conditions. YECL's comments do not reflect what the YECSIM model is designed to do.

Specifically, the following statements are made by YECL in its filing:

- "YEC's proposals rely on a complicated, opaque model with questionable accuracy and assumptions that are not consistent with current or reasonably anticipated circumstances" (cover letter, page 2).

- At page 3 YECL notes "...instead of looking at whether diesel was actually on the margin, YEC proposes to use its YECSIM model to forecast diesel consumption."

- YECL further notes that actual diesel generation varied a great deal from LTA using YECSIM, that differences between the YECSIM model forecast and actual can be material, and states "Notwithstanding that apparent inaccuracy, YEC proposes to use these as the simulated

diesel amounts to calculate its fuel variance, i.e., as the basis for its proposed DCF and ERA." (Cover letter, page 4).

- Specifically, YECL notes "in 2012 the YECSIM forecasted 15.6 GWh of diesel generation at actual grid load, but actual diesel generation was 2.7 GWh. In 2013, the YECSIM forecasted 13.3 GWh of diesel generation at actual grid load, but actual diesel generation was 1.1. GWh" and asserts "recent experience therefore shows that differences between the YECSIM model's forecast and actuals can be material." (Cover letter, at page 4).

- "YEC's proposed DCF mechanism suffers from over-reliance on untested simulated diesel variances derived from the YECSIM model. This has resulted in YEC's proposed mechanisms to credit more than $7.2M into the DCF in 2012 and 2013 with a dispersal trigger at +/-$8M." (Page 6).

- "Yukon Electrical believes the magnitude of the proposed DCF credits during YEC's test years, as well as the speed at which the fund has approached its proposed threshold of $8 million, indicate further review and testing of the YECSIM model (which is used for the DCF) as well as the dispersal trigger threshold is required." (Page 7).

Overall, the above comments demonstrate a fundamental misunderstanding of the Board approved LTA forecast, and the purpose and mechanisms behind the DCF proposal.

In fact, YEC's proposal relies on the same model that was used to provide the LTA hydro generation forecasts approved by the Board for the 2012/13 test years and used in YEC's Part 3 Applications related to the Mayo B Hydro Enhancement and Whitehorse Diesel - Natural Gas Conversion projects.

The YECSIM model[2] is a planning model that is designed to provide an accurate representation of the YEC power system under a variety of hydrologic conditions. It has been custom made to accommodate all significant factors that affect the operation of the YEC power system, including the complex rules of operation and the regulatory demands on YEC. It is not designed to forecast actual diesel expected to be incurred in a particular year. It is designed to provide what the diesel requirement would be under long-term average water conditions at a particular load level and under assumed licence and generation installation conditions.

[2]The YECSIM is the generation simulation model for the Integrated Grid developed for YEC by KGS Group. Diesel generation for the added grid load is based on polynomial equations derived from "YECSIM". The simulation model develops expected hydro plant capabilities for each load scenario. It reviews, by week, 28 "water years" of record (1981-2008) and 20 "load years" (each examines a different hypothetical scenario to reflect different sequences of the recorded water years), of which 13 load years (load years 7-19) are used for the final averaging (this deletes cases where starting or ending year volumes can distort results).

Long-term average diesel energy generation estimates reflect averages of widely varying annual water flow conditions, and the long-term average varies as YEC grid loads vary. Hydro generation in any one year can vary greatly from the long-term average estimated. For example, the following variability has been noted at grid loads as initially forecast for 2013 of 430.4 GWh/year based on water year records currently included in the YECSIM model (see page 1.1-5 of Appendix 1.1 of YEC's January 31, 2014 filing):

- Long term average hydro generation (net of expected wind at 0.2 GWh) capability approximates 412.0 GWh, with expected diesel generation (long-term average) of approximately 18.2 GWh;

- In extreme high water years increased hydro generation capability could lead to almost no diesel generation; and

- In extreme low water years reduced hydro generation capability could require diesel generation exceeding 100 GWh/year.

- At an assumed diesel fuel cost of 28.71 cents per kW.h, the long-term average diesel fuel generation cost of $5.2 million represents the average of a range of possible water conditions where diesel generation fuel cost in any given year could range from zero to over $28 million.

- Focusing only on single "lowest generation" year rate impacts understates the potential extreme cost impacts for ratepayers, i.e., the YECSIM assessment of the historical water record shows that the lowest water year generation (1999) occurs within a series of five years of very low water year generation (1996 to 2000 inclusive)[3].

Assertion regarding the purpose and design of ERA

YECL asserts (page 3 of cover letter) that the ERA is no longer appropriate, noting that it was established when "YEC and Yukon Electrical were jointly managed by Yukon Electrical". YECL further states: "All forecasts were prepared by Yukon Electrical and used jointly for both Yukon Electrical and YEC in common test period GRAs. If actual wholesale sales were higher (or lower) than the joint forecast, then one company would benefit to the detriment of the other. Given this arrangement, the ERA was developed to facilitate the two companies sharing sales forecast risk. The appropriateness of YEC flowing through charges to Yukon Electrical in such a manner was wholly predicated on the joint management of the companies."

[3] The most recent update of YEC longer term forecasts was provided in Appendix C of the Part 3 Application for the Whitehorse Diesel-Natural Gas Conversion Project. Table C-3 and Figure C-2 review the forecast diesel generation variability depending on different historic water year conditions for load scenarios during 2016-2018.

Yukon Energy notes that in fact the relevant forecasts for ERA purposes in the past, and today, are the forecasts as approved by the Board - and that the ERA is required and appropriate, in the past and today, to comply with OIC 1995/90, which provides that wholesale rates approved for YEC "must be sufficient to recover its costs that are not recovered from its other customers".

Absent the ERA or its equivalent, the OIC directive would not be met when YECL purchases power from YEC in excess of Board approved forecasts used to set rates (including the wholesale rate charged to YECL) and, as a result of such added wholesale sales, YEC incurs added costs for diesel (as charged per the DCF) that are in excess of the wholesale rate revenue recovered by YEC from these added wholesale sales.

Assertion that all sales margin growth for Yukon Electrical in Yukon Electrical non-test years will flow through to Yukon Energy

At page 5 of its cover letter YECL asserts: "The YEC proposal appears to provide that all sales margin growth for Yukon Electrical in Yukon Electrical non-test years will flow through to Yukon Energy," and at page 6 of its cover letter YECL asserts: "YEC's proposal would extinguish any potential for Yukon Electrical to benefit from increased sales to its customers."

It is not accurate to say that YEC's proposals would see all sales margin growth flow from YECL to YEC in all non-test years.

- An ERA charge to YECL would only occur in a year when there is YEC grid system load growth (above YEC GRA forecast), and that load growth is caused in whole or in part by YECL wholesale sales exceeding YEC GRA forecast.

- An ERA credit would only occur in a year when there is YEC grid system load decline (below YEC GRA forecast), and that load reduction is caused in whole or in part by YECL wholesale sales being less than YEC GRA forecast.

- Where YECL load changes are driven by underlying changes in YEC delivery areas (e.g., if the reason YECL's load grows is because of growth in YECL's sales to YEC at a downstream delivery location, such as Johnson's Crossing, where YEC repurchases back from YECL power than was originally generated by YEC), then this will not be considered to be YECL load growth or load reduction for the purposes of ERA determinations.

The ERA as approved when YECL was managing YEC in effect reflected run out rates charged to YECL customers, and thereby used up all of the sales margin growth experienced by YECL (as was in effect required to ensure that actual diesel costs incurred by YEC were recovered from YECL). The current YEC filing demonstrates (under Option A) that in 2012 the ERA as proposed would not result in all sale margin growth flowing from YEC to YECL. Further, the filing shows that under Option A

YECL would not incur any net cost penalty even when the ERA charge exceeds YECL's sale margin growth.

The current YEC filing also shows that under Option B YECL would retain its sales margin growth at the expense of ratepayers (who would then face higher rate rider charges).

- Option A in YEC's proposal – YECL revenues are reduced (or increased) each year by YEC ERA Charge (or rebate). As indicated in Table 2 and summarized in Table 4 of YEC's January 2014 Filing, in 2012 YECL's net revenues due to added sales would be reduced (not eliminated) from $0.571 million to $0.132 million; and in 2013 YECL would have a $0.009 million shortfall that would be recovered through YECL's deferral account (YECL would be held whole).

- Option B in YEC's proposal – There would be no impact on YECL as there is no ERA mechanism or charge to YECL. Under this option YECL would retain the added net revenue related to added sales of $0.571 million in 2012 and $0.004 million in 2013. Ratepayers would have a $0.463 million charge through the YEC Diesel Deferral Account Charge that they would not face under Option A and would have an additional charge in 2013 of $0.068 million (compared to $0.009 million under Option A).

Concerns regarding intergenerational inequity

YECL asserts that YEC's proposal does not address Board concerns regarding "intergenerational inequity" and "mask[ing] of market signals". The following are noted from YECL's submission:

- At page 6 YECL states, "YEC is failing to address the following Board concerns regarding the DCF, namely that the DCF masks market signals and results in some intergenerational inequity."

- Further at page 6-7, YECL cites the following comments from the Board in Order 2013-1:

    - "...[The Board] is concerned that the DCF masks market signals and that, in times of a drought, consumers will be removed from the signal to reduce consumption. The problem with smoothing rates is that it mutes market signals and hence consumer behaviour." (Board Order 2013-01, p. 54).

    - "...the use of the fund in the past has been sporadic as evidenced by the fact that the fund has not been active since 1999. Such periods of infrequent use raise issues of intergenerational inequity in that a consumer contributing to a fund today may benefit another consumer several years later." (Board Order 2013-01, p. 54).

- YECL goes on to note "...not only does YEC's proposal fail to address the Board's concerns in this regard, YEC is actually proposing to exacerbate the potential for masked market signals by increasing the size of the DCF from +/-$4 M to +/-$8M."[4].

Rate design criteria are inherently competing, most notably "economic and price signals" (i.e., economic efficiency) versus "rate stability and predictability". Yukon Energy notes the following with regard to the above concerns:

- From the outset of YEC's rates being regulated by the Board, it has been accepted as a basic principle that diesel cost variances from forecast due to water availability variances are a ratepayer risk and not a utility risk.

- Similar to other hydro-based systems, the system in place in Yukon to deal with water flow variation since the 1990's has been intended to maximize rate stability and predictability and mute the harsh short-term economic efficiency criteria as it arises with respect to diesel cost changes related only to water availability variances from approved forecasts used to set rates.

- If economic efficiency criteria principles had been favoured principles in relation to addressing water flow variation, a DCF (or similar mechanism) would not have been adopted to stabilize rates and rates would have varied based on short term water conditions at the time of each GRA. For example, when water conditions were above average, rates would have been relatively low, and in the case of low water, or drought conditions, there would have been harsh (and likely impractical) rate increases or special riders required to recover higher diesel costs. In short, the very concept of including long-term average water and a DCF in the rate system is intended to increase the rate stability of the system and decrease the harshness of the short-term economic efficiency outcome.

  When considering the impacts of an extreme drought, some intergenerational inequity will exist whether funds are collected before the event occurring or funds are collected after the event through required rate increases that must of necessity be spread over many years (due to the magnitude of the cost recovery required). Either way, ratepayers not present at the time of the drought will be required to pay part of the costs of the drought.

  The DCF was inactive over the last decade largely due to the material surplus hydro generation on the system due to the closure of the Faro mine in 1998. However, with surplus hydro generation largely fully absorbed due to ongoing load growth on the integrated grid over the past decade, the system has returned to a point where diesel is on the margin. This

[4] At page 7

fact was confirmed by the Board when it directed that LTA diesel generation costs be included n YEC's 2012/13 GRA revenue requirements.

The basic premise behind the DCF/rate setting method is that ratepayers pay the same during drought periods (when massive quantities of diesel may be required) as they do during floods (when very small quantities of diesel, if any, are required). To work effectively, this premise requires a DCF that is robust in terms of threshold limits (maximum and minimum levels allowed before funds are dispersed or replenished by any rate rider).

The approach advanced by YECL would mandate that the account be disbursed in a timely manner. However, "timely disbursal" is not aligned with the underlying purpose that a DCF-type account serves, i.e., the point of having a DCF is to establish and build a fund that is available to stabilize rates when there is material variation in water availability. During higher than average water years the fund is built up and during extreme low water years the fund is drawn down in order to stabilize rates and reduce impacts of drought events. Timely dispersal would prevent the fund from being built up and available to stabilize rates during low water years.

- In summary, the DCF has an inherent potential to mask short term cost signals to consumers when the DCF masks the extent to which current water conditions are limiting or expanding the need for diesel generation. The DCF was established specifically to prevent such short term price variability and to instead provide firm rate customers with appropriate longer term price signals. Further, due to lack of any interconnection with external grids, there is no "market" signal as such to be communicated to consumers as regards such cost variances.