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April 7, 2015

Mr. Bruce McLennan, Chair
Yukon Utilities Board
Box 31728
Whitehorse, Yukon Y1A 6L3

Dear Mr. McLennan:

Re: Revise Diesel Contingency Fund ("DCF") and Related Amendments to Rate Schedule 42 Pertaining to the Energy Reconciliation Adjustment ("ERA") – Compliance Filing

Pursuant to Board Order 2015-01, Yukon Energy Corporation (YEC) encloses herewith, for approval of the Board, a Compliance Filing in accordance with the directions set out in the reasons for Decision (Appendix A to Order 2015-01), and including the updated DCF and ERA calculations provided in Appendix A and Appendix B.

This submission addresses two separate matters: the DCF and the ERA. As reviewed in Order 2015-1, the DCF is not affected by the ERA and thus its approval is not contingent on approval of the ERA.

DCF

As noted in the Appendix A of the Compliance Filing, the DCF calculations show transfer from YEC to the DCF of $3.715 million in 2012, $3.518 million in 2013 and $1.342 million in 2014 [based on preliminary actuals].

The preliminary actuals for 2014 show the total grid generation load level is less than 400 GW.h, the minimum load level included in Table 1.1-1 Expected YEC Diesel Generation with LTA YEC Hydro Generation of YEC's January 31, 2014 filing. Accordingly, YEC has updated Table 1.1-1 to include load levels at 390 GW.h and 395 GW.h.

Table A2 in Appendix A provides a continuity schedule for the DCF, showing by the end of 2014 the DCF balance is $9.627 million, i.e. with $1.627 million exceeding the DCF cap of $8.0 million approved by the Board. In Table A3 in Appendix A YEC has provided for Board approval a DCF Rider rebate at 0.43 cents/kW.h effective May 1, 2015, and applies to all consumption on or after the effective date, for the next 12 months for all forecast firm retail and industrial sales of both YEC and ATCO Electric Yukon (AEY). This assumes approval by the end of April 2015.

ERA

As noted in the Compliance Filing, YEC has sought to implement the directions of the Board to assign costs (or credits) to AEY that are attributable to AEY's wholesale purchases that are in excess of (or less than) the wholesale forecast approved for YEC's last GRA in years when AEY's variance from this approved forecast is in the same direction as YEC's variance of actual diesel costs from the last approved forecast. However, as outlined in Appendix B, the ERA determination is dependent on confirmation of the definition of "actual diesel costs" for the purposes of the ERA. To ensure that the ERA determination did not yield unacceptable results, Yukon Energy has incorporated into its calculations the definition for "actual fuel costs" set out in Section 2.1.1.4 of Order 2015-01.

Please direct any questions on this communication to the undersigned.

Yours truly,

Ed Mollard
Chief Financial Officer

YUKON ENERGY CORPORATION

Board Order 2015-01 – Compliance Filing

Revise Diesel Contingency Fund and Related Amendments to Rate Schedule 42 Pertaining to the Energy Reconciliation Adjustment

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1.0 OVERVIEW

Yukon Energy Corporation ("YEC" or "Yukon Energy") initially filed its Diesel Contingency Fund (DCF) and Energy Reconciliation Adjustment (ERA) proposals as part of its 2012/13 GRA. The Yukon Utilities Board ("YUB" or "the Board") in Order 2013-01 and Order 2013-3 directed that further activities and consideration be addressed by Yukon Energy and Yukon Electrical Company Limited (YECL, now renamed ATCO Electric Yukon or AEY).

Following other filings by YEC and AEY as directed by the Board, on February 6, 2015 the Board issued Order 2015-01, approving the DCF and ERA amendments subject to the directions set out in the Reasons for Decision (Appendix A to the Order), and directing Yukon Energy to provide a Compliance Filing within 60 days from the date of Order.

In summary, Board Order 2015-1 directed Yukon Energy as follows regarding the DCF and the ERA:

1. **DCF:** Approved the DCF Application proposed by Yukon Energy in its January 31, 2014 Filing, and directed YEC to commence quarterly reports regarding the balance in the DCF account effective March 31, 2015;
2. **ERA:** The Board did not accept the ERA as proposed by Yukon Energy, and directed YEC to re-file the ERA with amendments as outlined in Appendix A to Order 2015-1.

This Compliance Filing sets out for approval of the Board the Yukon Energy filings as required by Order 2015-01, along with all related explanations, and includes the following sections:

- **Section 2** – summary overview of DCF;
- **Section 3** – summary overview of ERA;
- **Section 4** – summary of requested approvals; and
- **Section 5** – Summary Table (summary of the specific Directives from the Reasons for Decision that are addressed in this filing, and how these Directives are addressed).

2.0 SUMMARY OVERVIEW OF DCF

The Board in section 2.1.1.4 of Order 2015-1 approved the DCF as proposed by Yukon Energy in Appendix 1 (Revised Diesel Contingency Fund (DCF) Proposal) of Yukon Energy's January 31, 2014 Filing.

Attachment 1, of Yukon Energy's January 31, 2014 Revised DCF Proposal, includes Attachment 1.1 Revised DCF Term Sheet: YEC Grid & YECL Fish Lake which sets out the specific updated terms of the DCF Proposal. For future reference, a final DCF Term Sheet with updated terms as approved by Order 2015-1 and any proposed clarifications included in this Compliance Filing is provided as Attachment 1 to this Compliance Filing.

In summary, Order 2015-1 confirmed the following regarding the DCF:

- **Diesel on the Margin -** The Board now considers that diesel or "thermal" generation will form part of baseload generation thus making the question of diesel being "on the margin" or "off the

margin" as moot. Accordingly, the Board does not now consider diesel being "on the margin" part of the criteria for invoking the DCF.

- **Secondary Sales** – The Board determined that the availability of secondary sales does not determine the application of the DCF.
- **Fund Operation and YEC's Actual Diesel Costs –** The Board directed that the DCF fund is to be used only for variations from long-term average (LTA) water availability. The Board noted that YEC records expected diesel costs based on LTA hydro availability, and that any deviation between the expected diesel costs at LTA availability and actual diesel costs are then attributed to the DCF. The Board quoted (with underlining) YEC's evidence that, 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".
- **YECSIM Model** – The Board approved the DCF as proposed by YEC based on LTA hydro generation forecast as provided by means of the YECSIM model, and accepted the DCF as proposed by YEC because it is a fund for customers to smooth rate impacts for those occasions when hydro generation is less than LTA or to build up the fund when hydro generation is greater than LTA.
- **Fund "Caps"** – The Board approved the DCF fund cap level of +/- $8 million as proposed by YEC as an acceptable balance between frequency of rider applications and ability to handle material (drought) changes in hydro availability.

In addition to reflecting the result of the Board's decision in its Compliance Filing, YEC was also directed to provide the following:

- **An updated balance for the DCF –** Section 2.1 of this Compliance Filing provides DCF estimates for 2012, 2013 and 2014.
- **To include any actions to be undertaken regarding the DCF balance, if necessary –** Section 2.2 of this Compliance Filing provides Yukon Energy's response regarding DCF Balance Cap and Reporting.
- **To commence quarterly reports regarding the balance in the DCF account effective March 31, 2015** – YEC will provide quarterly reports regarding the DCF calculations and DCF balance updates per the Board's direction; however, as reviewed below in section 2.2, the quarterly DCF reports will be interim calculations based on forecast loads for the year at the time of calculation (as the DCF table calculates the expected diesel amount based on annual load, not quarterly). DCF determinations for accounting will be based only on year end determinations.

2.1 DCF ESTIMATES FOR 2012, 2013 AND 2014

Table A1 in Appendix A provides DCF calculations for 2012 and 2013 actuals, as well as 2014 preliminary actuals.

Preliminary actuals for 2014 indicate total grid generation load level less than 400 GW.h, the minimum load level included in Table 1.1-1 Expected YEC Diesel Generation with LTA YEC Hydro Generation of

YEC's January 31, 2014 filing.[1] In Attachment 1 to the Compliance Filing YEC has accordingly provided an updated Table 1-1 to include load levels at 390 GW.h and 395 GW.h. The long-term average hydro generation and thermal generation estimates for 2014 preliminary actuals are prepared using Table 1-1, based on the same approach as was done previously, i.e. using YECSIM model outcomes.

2.2 DCF BALANCE CAP AND REPORTING

DCF Fund Balance "Cap" and Related Rider E

Table A2 in Appendix A provides a continuity schedule for the DCF. It is estimated, based on preliminary actuals for 2014, that at end of 2014 the DCF balance will be $9.627 million and that a refund rider to ratepayers will be required for $1.627 million (the amount that exceeds the $8 million DCF cap approved by the Board).

Table A3 in Appendix A provides the proposed DCF rider rebate determination of -0.43 cents/kW.h based on the estimated $1.627 million amount exceeding the DCF cap. As noted, the refund rider at this time is estimated based on preliminary actuals for 2014 Yukon-wide retail and major industrial sales.[2]

Yukon Energy proposes to implement a 12 month refund rider for consumption on or after the effective date of May 1, 2015. The proposed Rider E rate schedule, with the proposed DCF rider rebate, is provided as Attachment 2.

For future years, to avoid multiple DCF rate riders, it is proposed that new DCF rate riders also commence as of the same date (April 1) and reflect assessments of expected impacts of any current DCF rate riders that may exist prior to that date.

Reporting Requirements

Order 2015-1 approved the applied for cap of +/- $8 million, but noted that "if the balance in the DCF falls out of the +/- $8 million range, YEC shall make an application to the Board to dispense with the balance that is outside of that range within 60 days of the outside-the-range occurrence".[3]

With regard to reporting and review of DCF calculations, YEC filings during the proceeding noted that any interim determinations for the DCF prior to a fiscal year end would only be placeholders and that only the year end determinations will in fact have ongoing relevance, i.e., quarterly reports as proposed would simply provide updates on apparent trends and issues. Taking this constraint into consideration, the following are proposed for ongoing reporting as directed by the Board:

- Quarterly reports regarding the DCF calculations and DCF balance updates will be provided based on interim determinations prior to a fiscal year end and will only be used as placeholders. The quarterly DCF calculations will be based on forecast loads for the year at the time of calculation as the DCF table calculates the expected diesel amount based on annual load, not quarterly. Only year-end determinations will in fact have ongoing relevance for accounting and rate riders.

[1] Please see footnote #6 to the Table 1.1-1 of YEC January 31, 2014 filing, which notes that the table assumes max load at 475 GW.h and minimum load at 400 GW.h and if the load exceeds these limits then the table needs to be updated.
[2] 2014 preliminary actual retail and major industrial sales for YEC and AEY, excludes secondary sales. Data for AEY as provided by AEY.
[3] Board Order 2015-01, Appendix A, section 2.1.1.4 page 15.

- In any year when the balance in the DCF fall outside of the +/- $8 million range at fiscal year end, YEC shall apply to the Board within 60 days of the fiscal year end to deal with the balance that is outside of that range, i.e., to dispense with a balance that exceeds +$8 million and to recover a balance that fall below -$8 million.

3.0 SUMMARY OVERVIEW OF ERA

Section 2.2.1.4 of Board Order 2015-01 (p. 23) states that the Board "does not accept the ERA as proposed by YEC," and directs Yukon Energy as follows:

- "to provide a revised ERA that is based on actual diesel costs"[4]; and
- "to update the Board regarding any ERA charges for the years 2012, 2013, and a forecast for 2014."

Overall, Yukon Energy understands that the direction provided in Order 2015-1 retains an ERA mechanism which remains an element of wholesale Rate Schedule 42 charged to AEY, and is intended to comply with Section 7 of OIC 1995/90. Further, Yukon Energy understands that Order 2015-01 confirms that the ERA, as an element of Rate Schedule 42, is to determine the YEC annual diesel costs above or below GRA approved forecasts which are attributable to AEY wholesale loads being above or below the last approved YEC GRA wholesale forecast.

Order 2015-01 directs that the revised ERA is to be based on YEC's "actual diesel costs".

As reviewed in Appendix B of this Compliance Filing, Order 2015-01 provides two different references to YEC's "actual diesel costs":

- The first reference (Reference A) occurs during the DCF part of the Order (section 2.1) and assumes YEC's costs after DCF determinations; and
- The second reference (Reference B) occurs during the ERA part of the Order (section 2.2) and assumes YEC's costs before DCF determinations.

ERA implementation impacts have been examined separately in Appendix B for each of the above two references to YEC's actual diesel costs, assuming 2012 actual loads and two scenarios for water availability (actual water availability in 2012, and a scenario with assumed drought conditions).

In summary, as reviewed in Appendix B, adoption of Reference B for YEC's actual diesel costs (i.e., before any DCF determinations) when implementing the ERA yields impacts which YEC believes would be patently unacceptable to all stakeholders including the Board. For example, when actual loads exceed GRA forecasts:

- Under drought conditions (where water availability is significantly less than LTA), double counting of DCF related diesel costs would occur, i.e., YEC would receive payments from both the DCF and

[4] The Board states as follows: "the costs are for actual diesel generation costs, not forecast or deferred costs from the YECSIM model" and "the ERA does not need to be linked to the DCF to comply with O.I.C. 1995/90. The ERA, as determined by the Board, is a comparison of forecast and actual values and therefore the ERA calculation does not need to be completed before ERA amounts are determined." At page 24, the Board states: "In summary, the Board finds that the ERA need not be tied to the DCF. ERA charges or credits are to be based on actual costs versus forecast costs. On a go-forward basis, ERA charges must be billed, or credited, within 30 days of the close of the year to which those charges relate."

from AEY (through the ERA) for the same added costs for actual diesel generation being higher than long-term average. And if AEY seeks to recover its ERA costs from ratepayers in this situation, ratepayers would be charged a second time for the amounts that YEC recovered from the DCF.

- Under high water conditions (where water availability exceeds LTA), YEC would be unable to recover its added actual diesel costs, after DCF determinations (as defined in Reference B), when AEY wholesales exceed the GRA forecast. One of the prime purposes of the ERA is to enable YEC to recover such costs when they occur.

In contrast, adoption of Reference A for YEC's actual diesel costs (i.e., after the DCF determinations) when implementing the ERA avoids the above unintended impacts on parties.

Accordingly, in order to avoid unacceptable results, Yukon Energy in this Compliance Filing has implemented the ERA as outlined in Appendix B based on the Order's Reference A definition for YEC's actual diesel costs. Reference A actual diesel costs are the costs used for YEC's income statement, revenue requirement and rates charged to customers.

3.1 ERA ESTIMATES FOR 2012, 2013 AND 2014

Table B3 in Appendix B provides ERA determinations for 2012, 2013 and 2014 based on YEC's "actual diesel costs" as will be reflected in its income statement after consideration of DCF assessments for each year (Reference A above). The following ERA amounts are shown:

- 2012: ERA charge of $439,000 (based on added YEC cost of $1.773 million less added YEC revenue of $1.335 million attributed to AEY wholesales being higher than the 2012 approved forecast).
- 2013: no ERA charge or rebate (based on added cost being offset by added revenues).
- Preliminary 2014: ERA rebate of $190,000 (based on reduced YEC cost of $0.995 million less reduced YEC revenue of $1.185 million attributed to AEY wholesales being less than the 2013 last approved GRA forecast).

3.2 ERA REPORTING

Due to the need to utilize DCF determinations when finalizing the ERA for any year, it will not be feasible to provide the ERA to AEY within 30 days of year end. It is therefore proposed that the ERA be determined concurrent with the DCF within 60 days of year end, and that the Board be provided with a copy of such determinations. In order to assist AEY in its year end closing, YEC will provide AEY with an interim estimate of the ERA within 30 days of year end.

4.0 REQUESTED APPROVALS

Yukon Energy requests the following final approvals:

1. Approval of Revised DCF Term Sheet as set out in Attachment 1, including Table 1-1, as the basis for DCF calculations for the years 2012, 2013 and 2014 (and any future year until otherwise

required to accommodate material load shape or renewable generation changes), including provision for lower load YEC Grid Load levels at 390 GW.h and 395 GW.h.

2. Approval of DCF amounts as provided in Table A1 of Appendix A for 2012 and 2013 as final and for 2014 as preliminary.
3. Approval of a DCF Rider rate schedule as set out in Attachment 2, applied to consumption on or after the effective date of May 1, 2015 and until or on March 31, 2016, with a rebate of 0.43 cents/kW.h for all firm kW.h retail and major industrial sales in Yukon of YEC and AEY.
4. In any future year when the balance in the DCF (after provision for any existing rate rider impacts) falls outside of the +/- $8 million range at fiscal year end, approval for YEC to file an application to the Board within 60 days of the fiscal year end for a rate rider to deal with the balance in the DCF that is outside of that range.
5. Approval of ERA charges as per Table B3 of Appendix B for 2012, 2013 and 2014 as final, and approval that in future years the ERA be determined concurrent with the DCF within 60 days of year end, and that the Board be provided with a copy of such determinations.

5.0 BOARD DIRECTIVES - SUMMARY TABLE

The following table summarizes how Order 2015-01 was applied by Yukon Energy in this Compliance Filing, and addresses other matters, arranged by section in the Reasons for Decision.

Table 5.1: Board Directives & Conclusions

Sub-Issue	Board Directive	YEC Response
DCF	*The Board approves the DCF as proposed by YEC. However, the Board directs that the DCF fund is to be used only for variations from LTA water availability. Any application to utilize the fund in some other fashion will require the closing of the fund, the refunding of any balances to customers, and the direction for YEC to use short-term forecasts for its hydro generation for future GRAs.* ***[Appendix A, Section 2.1.1.4, page 14]***. *The DCF will have a cap of +/- $8 million as proposed by YEC. If the balance in the DCF falls out of the +/- $8 million range, YEC shall make an application to the Board to dispense with the balance that is outside of that range within 60 days of the outside-the-range occurrence.* ***[Appendix A, Section 2.1.1.4, page 15]***. *YEC is to reflect the result of this decision in its compliance filing to this decision. In the compliance filing, YEC is to provide an updated balance for the DCF and include any actions to be undertaken regarding that balance if necessary.* ***[Appendix A, Section 2.1.1.4, page 15]***.	YEC provided DCF estimates for 2012 and 2013 actuals, as well as for 2014 preliminary actuals in Appendix A of the Compliance Filing. DCF fund will be kept in a separate account and will be used based on Board directions. Appendix A of the Compliance Filing includes a continuity schedule for DCF as well as DCF Rider estimate and rate schedule to dispense the amount that exceeds the DCF cap approved by the Board as at the end of 2014.
ERA	*In its compliance filing to this decision, YEC is to provide a revised ERA that is based on actual diesel costs. That is, if actual diesel costs are higher than the levels of diesel contained in YEC's latest approved forecast, then those costs which are attributable to YECL's wholesale purchases that are in excess of those in the last approved forecast will become billable to YECL. The converse is also true: a credit applies when diesel costs are lower and that reduction in cost relates to YECL wholesale loads being less than forecast. Further, in the event ERA costs are billable to YECL, YEC must provide those charges to YECL within 30 days of the close of the*	In Appendix B of the Compliance Filing, YEC reviewed issues related to implementation of the ERA, and in Table B1 provided ERA calculations under two options for YEC's "actual diesel costs" for 2012 actual loads with actual YEC diesel generation and a case for YEC diesel generation assuming a drought. Table B3 provides ERA estimates for 2012, 2013 and 2014 preliminary actuals based on YEC's "actual diesel costs" as reflected in YEC's income statement after DCF

Sub-Issue	Board Directive	YEC Response
	year to which those charges relate. *With its compliance filing, YEC is to update the Board regarding any ERA charges for the years 2012, 2013, and a forecast for 2014.* ***[Appendix A, Section 2.2.1.4, page 23]**.* *In summary, the Board finds that the ERA need not be tied to the DCF. ERA charges or credits are to be based on actual costs versus forecast costs. On a go-forward basis, ERA charges must be billed, or credited, within 30 days of the close of the year to which those charges relate.* ***[Appendix A, Section 2.2.1.4, page 24]**.*	determinations each year. As reviewed in Appendix B of the Compliance Filing, DCF determinations are assumed to be required for ERA calculations. Future ERA calculations will be available and be billed or credited within 60 days of the close of the year, concurrent with DCF determinations.
YECSIM	*The 2012-13 LTA forecast was provided by means of YEC's YECSIM model and was not contested at that time. Moreover, no evidence has been presented in this proceeding that the YECSIM model does not operate as it is intended, or that there would be any harm to customers if the model is used in a consistent fashion for DCF purposes. The evidence of YEC is that the fund is held in "trust" for customers.* *However, if YEC is to continue to use the YECSIM model for forecasting, it has to make the model and its results available for testing because as a public utility its forecasts and rates proposals that are based on its forecasts are subject to testing by interveners and the Board. Providing forecasts which can be tested is essential in setting rates.* ***[Appendix A, Section 2.1.1.4, page 14]**.* *Whatever model YEC uses to determine LTA hydro generation, DCF calculations or other forecast process, that model and its results, or other forecast process must be made available for testing by the Board and interveners.* ***[Appendix A, Section 2.1.1.4, page 15]**.*	YEC will address these Board directions in its next GRA, and have available all results, assumptions, methods and other key elements of the model when YECSIM model is used for ratemaking purposes.

ATTACHMENT 1: REVISED DCF TERM SHEET: YEC GRID & AEY FISH LAKE

PURPOSE & FUNCTION:

The Diesel Contingency Fund ("DCF") operates to smooth customer rate changes from thermal (diesel, LNG and other thermal) generation cost impacts caused by fluctuation of hydro generation due to water conditions or changes in wind conditions.[5]

Yukon Energy Corporation (YEC) manages the DCF as a ratepayer "trust fund". The Fund is only to be used for variations from long-term average (LTA) water and wind availability.[6]

LONG-TERM AVERAGE:

Board Order 2013-01 directed YEC to base its hydro and diesel energy requirements for YEC's GRA forecasts on 100 percent of long-term average (LTA) hydro generation.

The annual expected thermal generation requirements are determined based on the formulaic approach as provided below and takes into account variability from LTA in ATCO Electric Yukon's (AEY's) Fish Lake hydro generation and YEC hydro and wind generation.[7]

Formulaic approach – determine expected YEC thermal generation based on LTA water-based YEC hydro generation that is forecast using a formulaic relationship to load in each year (including non-test years):[8]

a. Table 1-1 is adopted to determine annual expected YEC thermal generation based on long-term average YEC hydro generation at YEC grid loads (net of expected wind and expected Fish Lake generation) ranging from 390 to 475 GW.h/year, assuming mine loads connected as forecast in the approved GRA for 2012.

b. Table 1-1 provides (below) an example of the determination of expected YEC diesel generation at a grid load of 417 GW.h (net of expected wind and expected Fish Lake generation).

c. YEC will provide the Board, for review and approval, an update to Table 1-1 when required in future to address material changes in

[5] Appendix A to Board Order 2015-01, section 2.1.1.4, page 11.
[6] Appendix A to Board Order 2015-01, section 2.1.1.4, page 14. The Board directed as follows: "Any application to utilize the fund in some other fashion will require the closing of the fund, the refunding of any balances to customers, and the direction for YEC to use short-term forecasts for its hydro generation in future GRAs."
[7] AEY Fish Lake generation based on long-term average as approved by the Board Order 2014-06 at 8.73 GW.h and the last approved YEC wind generation (239 MW.h/year). The Fish Lake long-term average generation for 2012 and 2013 was at 4.38 GW.h due to unavailability of Unit #1.
[8] Long-term average hydro generation under any set of assumed grid generation load and grid generation capacity and licence conditions is determined in the 2012/13 GRA based on YECSIM power benefit model calculations based on 28 years of water record for the interconnected grid. As load grows a portion of the load growth is currently served (on average) by increased hydro output and the remainder by increased average diesel. This same analysis would apply to LNG if it replaces diesel on the grid.

LTA hydro system capability due to changes in loads, installed capacity, licensing/permits or other factors.

DCF DIESEL SAVINGS (COSTS):

YEC thermal generation savings (excess) are calculated on an annual basis for the DCF based on expected thermal generation less actual thermal generation.[9] Costs for YEC thermal generation savings (excess) are calculated based on the last approved average cost of fuel for YEC per kWh based on the most recent YEC GRA.[10]

Non-fuel O&M costs related to YEC thermal generation are not included in the DCF calculations at this time. YEC will review and report on this at its next GRA.

DIESEL ON THE MARGIN:

The Board in Order 2015-01 noted that it does not consider diesel being "on the margin" part of the criteria for invoking the DCF. Based on current loads, expected load growth and LTA hydro generation, the Board determined that there is a reasonable expectation that under these conditions that diesel or "thermal" generation will form part of baseload generation thus making the question of diesel being either "on the margin" or "off the margin" moot.

QUANTUM & CAP:

The Board in Order 2015-01 approved a "cap" for the DCF of +/- $8 million as an acceptable balance between frequency of rider applications and ability to handle material (drought) changes in hydro availability.

In any year when the balance in the DCF fall outside of the +/- $8 million range at fiscal year end, YEC shall apply to the Board for approval of a rate rider to dispense with the balance that is outside of that range within 60 days of the fiscal year end.

The refund (when DCF balance exceeds $8 million level) or collection (when DCF balance is below -$8 million level) is to be made by way of a rate-rider to customers over next 12 month period. YEC may apply and the Board may approve the longer/shorter refund/collections period depending of the amount of refund/collections required. The rider is applicable for all retail and industrial firm sales in Yukon for both YEC and AEY.

INTEREST:

The Fund is to attract interest based upon the short/intermediate term bond rates in which YEC may invest the Fund and any negative balances would only attract interest at the lowest short-term borrowing rate available to YEC through a line of credit.

[9] Actual thermal generation excludes thermal generation charged to capital projects or to RFID.
[10] The last approved average diesel fuel cost is based on YEC's 2012/13 GRA at 28.71 cents/kW.h. The LNG generation is not in service yet. YEC will report to the Board (in its quarterly report) when LNG generation is in service, and provide (for Board review and approval) a proposed approach for inclusion of LNG in ongoing DCF determinations.

QUARTERLY & ANNUAL REPORTING:

An annual report is required to be filed with the Board detailing additions and deletions to the Fund and a forecast of water conditions for the next year. The annual report to the Board is also to include a proposed rate rider to refund/collect any amount that exceeds the approved cap. The Board will direct YEC on the additions and deletions to the Fund, and on any proposed rate rider.

Quarterly reports regarding the DCF calculations and DCF balance updates will be provided to the Board based on interim determinations prior to a fiscal year end. The quarterly DCF calculations will be based on forecast loads for the year at the time of calculation as the DCF table calculates the expected diesel amount based on annual load, not quarterly.

Any interim determinations prior to a fiscal year end will only be placeholders; only the year end determinations will in fact have ongoing relevance for accounting and rate riders.

Examples of DCF calculations for 5 years are provided in Tables 1-2 and 1-3 below.

Table 1-1: Expected YEC Diesel Generation with LTA YEC Hydro Generation

Line Number	YEC Grid Load (GWh)	YEC Hydro Generation (GWh)	YEC Diesel Generation (GWh)	Increase in Load (GWh)	Increase in Diesel Generation (GWh)	Diesel as % of Increased Load
	Column A	Column B	Column C	Column D	Column E	Column F = E/D
1	390	387.0	3.0			
2	395	390.6	4.4	5.0	1.4	28%
3	400	394.0	6.0	5.0	1.6	32%
4	405	397.2	7.8	5.0	1.8	36%
5	410	400.2	9.8	5.0	2.0	40%
6	415	403.2	11.8	5.0	2.0	40%
7	420	405.9	14.1	5.0	2.3	46%
8	425	408.6	16.4	5.0	2.3	46%
9	430	411.1	18.9	5.0	2.5	50%
10	435	413.4	21.6	5.0	2.7	54%
11	440	415.5	24.5	5.0	2.9	58%
12	445	417.5	27.5	5.0	3.0	60%
13	450	419.4	30.6	5.0	3.1	62%
14	455	421.1	33.9	5.0	3.3	66%
15	460	422.6	37.4	5.0	3.5	70%
16	465	424.0	41.0	5.0	3.6	72%
17	470	425.3	44.7	5.0	3.7	74%
18	475	426.4	48.6	5.0	3.9	78%

Notes:
1. "YEC Grid Load" is annual YEC generation load on the Integrated Grid, excluding expected (GRA forecast) YEC Wind generation and actual less expected Fish Lake hydro generation.
2. The diesel generation and increase for the added load are based on polynomial equations derived from "YECSIM" - the simulation model developed for the Integrated Grid by KGS Group.
3. 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). "Hydro Generation" is long-term average hydro generation as estimated by YECSIM.
4. The simulation model outputs for this table are based on Aishihik operation rule at 10-year rolling average spring elevation no lower than 913.7 m and current Mayo Lake operation rule (no additional storage), Mayo B and Aishihik 3rd turbine are included.
5. The simulation model outputs are based on 2012 forecast load distributions [updated based on YUB Order 2013-01], and requires modifications when new mines or industrial loads are connected to the grid.
6. This table assumes max load at 475 GW.h and minimum load at 390 GW.h. If the load exceeds these limits then the table needs to be updated.
7. Numbers are subject to rounding.

Example:
Expected YEC Diesel Generation for YEC Grid Load at 417 GW.h (net of expected YEC Wind & expected AEY Fish Lake)

Step 1. Find the closest load from Column A that is less than 417 GW.h = 415 GW.h (Line 6).

Step 2. Find the diesel generation from Column C = 11.8 GW.h (Line 6).

Step 3. Find the difference between the given load (417 GW.h) and load from Step 1 (415 GW.h) = 2 GW.h

Step 4. Apply the percentage from Column F (Line 7, 46%) to the difference from Step 3 (2 GW.h) = 0.92 GW.h

Step 5. Add numbers from Step 2 (11.8 GW.h) and Step 4 (0.92 GW.h) = 12.72 GW.h

The expected diesel generation at 417 GW.h load is 12.72 GW.h.

Notes:
The load assumed the maximum load at 475 GW.h and the minimum load at 390 GW.h.

Table 1-2: DCF Operation Example for 5 Forecast Years

Line	Activity	Year 1	Year 2	Year 3	Year 4	Year 5
A	**DCF Opening Balance[1] ($000s)**	**$902**	**$1,764**	**$2,753**	**$4,093**	**$2,258**
B	**Yukon Grid Generation[2]**	414,283	425,117	445,500	455,600	469,730
C	**AEY Fish Lake[2]**	8,730	8,730	8,900	7,000	8,730
	YEC Grid Generation[2]					
D	Assumed actual YEC Hydro (MW.h)	400,315	407,149	418,100	413,400	425,762
E	Assumed actual YEC Diesel [net of capital, insurance, etc.] (MW.h)	5,000	9,000	18,000	35,000	35,000
F	Assumed actual actual Wind (MW.h)	238	238	500	200	238
G=D+E+F	Total YEC Generation (MW.h)	405,553	416,387	436,600	448,600	461,000
H	Expected YEC Diesel Generation in Rates[3] (MW.h)	7,926	12,328	22,489	28,512	37,933
I=E-H	YEC Diesel Generation to be Included in DCF (MW.h)	-2,926	-3,328	-4,489	6,488	-2,933
J=I*$0.2871	Incremental Diesel Generation Cost to Charge[4] (Refund) DCF ($000s)	($840)	($956)	($1,289)	$1,863	($842)
K=J	Total DCF operation for YEC					
	YEC pays to DCF Fund	$840	$956	$1,289		$842
	YEC withdraws from DCF Fund				($1,863)	
L=A+K	**DCF Ending Balance ($000s)**	**$1,742**	**$2,719**	**$4,042**	**$2,230**	**$3,100**
M	**Interest on DCF Balance[5] ($000s)**	**$22**	**$34**	**$51**	**$28**	**$39**
N=L+M	**DCF Ending Balance[6] after Interest charge ($000s)**	**$1,764**	**$2,753**	**$4,093**	**$2,258**	**$3,139**
O	**Required Collections/(Refund)[7] ($000s)**	**$0**	**$0**	**$0**	**$0**	**$0**

Notes:
1. DCF opening balance for Year 1 is 2011 actual ending balance of DCF account.
2. Assumed actual generation. Please see detailed calculations in Table 1-3.
3. Expected YEC diesel generation is calculated based on Updated Table 1-1 in Attachment 1. Please see detailed calculations in Table 1-3.
4. Diesel generation cost assumed at 28.71 cents/kW.h (based on 2012/13 GRA Compliance Filing average fuel cost).
5. Per the March 11, 1996 letter recording the settlements [provided as Exhibit B-16 in the 2008/2009 GRA] the DCF fund is to attract interest based upon the short/intermediate term bond rates in which the Companies may invest the fund and any negative balances would only attract interest at the lowest short-term borrowing rate available to the Companies through a line of credit. For this example used 1.25% based on Government of Canada Bond Yields for 3-year and 5-year issues.
6. Positive balances represent amounts to the benefit of ratepayers; negative balances are amounts owing to YEC.
7. YUB in its Order 2015-01 approved the DCF balance cap at +/- $8 million. In any year when the balance in the DCF fall outside of the +/- $8 million range at fiscal year end, YEC shall apply to the Board for approval of a rate rider to dispense with the balance that is outside of that range within 60 days of the fiscal year end.

Table 1-3: DCF Formulaic Approach Operation Examples for 5 Load Forecast Cases

Line No					Notes
L1	Fuel Cost per kW.h		28.71	cents/kW.h	Compliance Filing Average Fuel cost
Calculation of Diesel Cost to Charge (Refund) DCF					
Year 1 - Actual Wind and Fish Lake at Forecast; Actual Diesel Generation Below Expected					
	Assumptions				
L2	YEC Grid load		405,553	MW.h	assumed actual
L3	Fish Lake		8,730	MW.h	assumed actual
L4=L2+L3	Total Grid load		414,283	MW.h	
	Assumed Actual Generation Sources				
L5	YECL Fish Lake		8,730	MW.h	assumed actual
L6	YEC Hydro		400,315	MW.h	assumed actual
L7	YEC Diesel (net of capital and insurance)		5,000	MW.h	assumed actual
L8	YEC Wind		238	MW.h	assumed actual
L9	Total Grid load		414,283	MW.h	
	Expected Generation Sources				
L10	YECL Fish Lake (expected)		8,730	MW.h	YECL Fish Lake long term average hydro generation based on YUB Order 2014-06.
L11	YEC Wind (expected)		238	MW.h	YEC 2012/13 GRA
L12=L9-L10-L11	YEC Grid load net of expected Fish Lake and Wind		405,315	MW.h	
L13	Expected Base Diesel Generation at 405 GW.h		7,800	MW.h	Derived from updated Table 1-1, Attachment 1
L14=(L12-405 GW.h)x40%	Expected Incremental Diesel Generation at 315 MW.h above 405 GW.h		126	MW.h	40% of Grid Load between 405 GW.h and 410 GW.h is diesel - Derived from updated Table 1-1, Attachment 1
L15=L13+L14	Total Expected YEC Diesel Generation		7,926	MW.h	
L16=L15	Expected YEC Diesel Generation in Rates		7,926	MW.h	100% of long-term average
L17=L7	Actual YEC Diesel Generation		5,000	MW.h	assumed actual
L18=L17-L16	YEC Diesel Generation to be Included in DCF	-	2,926	MW.h	
L19=L1xL18	Incremental YEC Diesel Generation Cost to Charge (Refund) DCF ($000s)		($840)		
Year 2 - Actual Wind and Fish Lake at Forecast; Actual Diesel Generation Below Expected					
	Assumptions				
L2	YEC Grid load		416,387	MW.h	assumed actual
L3	Fish Lake		8,730	MW.h	assumed actual
L4=L2+L3	Total Grid load		425,117	MW.h	
	Assumed Actual Generation Sources				
L5	YECL Fish Lake		8,730	MW.h	assumed actual
L6	YEC Hydro		407,149	MW.h	assumed actual
L7	YEC Diesel (net of capital and insurance)		9,000	MW.h	assumed actual
L8	YEC Wind		238	MW.h	assumed actual
L9	Total Grid load		425,117	MW.h	
	Expected Generation Sources				
L10	YECL Fish Lake (expected)		8,730	MW.h	YECL Fish Lake long term average hydro generation based on YUB Order 2014-06.
L11	YEC Wind (expected)		238	MW.h	YEC 2012/13 GRA
L12=L9-L10-L11	YEC Grid load net of expected Fish Lake and Wind		416,149	MW.h	
L13	Expected Base Diesel Generation at 415 GW.h		11,800	MW.h	Derived from updated Table 1-1, Attachment 1
L14=(L12-415 GW.h)x46%	Expected Incremental Diesel Generation at 1,149 MW.h above 415 GW.h		528	MW.h	46% of Grid Load between 415 GW.h and 420 GW.h is diesel - Derived from updated Table 1-1, Attachment 1
L15=L13+L14	Total Expected YEC Diesel Generation		12,328	MW.h	
L16=L15	Expected YEC Diesel Generation in Rates		12,328	MW.h	100% of long-term average
L17=L7	Actual YEC Diesel Generation		9,000	MW.h	Assumed
L18=L17-L16	YEC Diesel Generation to be Included in DCF	-	3,328	MW.h	
L19=L1xL18	Incremental YEC Diesel Generation Cost to Charge (Refund) DCF ($000s)		($956)		

Table 1-3: DCF Formulaic Approach Operation Examples for 5 Load Forecast Cases (cont.)

Year 3 - Actual Wind and Fish Lake Higher than Forecast; Actual Diesel Generation Below Expected

	Assumptions			
L2	YEC Grid load	436,600	MW.h	
L3	Fish Lake	8,900	MW.h	
L4=L2+L3	Total Grid load	445,500	MW.h	
	Assumed Actual Generation Sources			
L5	YECL Fish Lake	8,900	MW.h	
L6	YEC Hydro	418,100	MW.h	
L7	YEC Diesel (net of capital and insurance)	18,000	MW.h	
L8	YEC Wind	500	MW.h	
L9	Total Grid load	445,500	MW.h	
L10	YECL Fish Lake (expected)	8,730	MW.h	YECL Fish Lake long term average hydro generation based on YUB Order 2014-06.
L11	YEC Wind (expected)	238	MW.h	YEC 2012/13 GRA
L12=L9-L10-L11	YEC Grid load net of expected Fish Lake and Wind	436,532	MW.h	
L13	Expected Base Diesel Generation at 435 GW.h	21,600	MW.h	Derived from updated Table 1.1-1
L14=(L12-435 GW.h)x58%	Expected Incremental Diesel Generation at 1,532 MW.h above 435 GW.h	889	MW.h	58% of Load between 435 GW.h and 440 GW.h is diesel
L15=L13+L14	Total Expected YEC Diesel Generation	22,489	MW.h	
L16=L15	Expected YEC Diesel Generation in Rates	22,489	MW.h	100% of long-term average
L17=L7	Actual YEC Diesel Generation	18,000	MW.h	Assumed
L18=L17-L16	YEC Diesel Generation to be Included in DCF	- 4,489	MW.h	
L19=L1xL18	Incremental YEC Diesel Generation Cost to Charge (Refund) DCF ($000s)	($1,289)		

Year 4 - Actual Wind and Fish Lake below Forecast; Actual Diesel Generation Above Expected

	Assumptions			
L2	YEC Grid load	448,600	MW.h	
L3	Fish Lake	7,000	MW.h	
L4=L2+L3	Total Grid load	455,600	MW.h	
	Assumed Actual Generation Sources			
L5	YECL Fish Lake	7,000	MW.h	
L6	YEC Hydro	413,400	MW.h	
L7	YEC Diesel (net of capital and insurance)	35,000	MW.h	
L8	YEC Wind	200	MW.h	
L9	Total Grid load	455,600	MW.h	
	Expected Generation Sources			
L10	YECL Fish Lake (expected)	8,730	MW.h	YECL Fish Lake long term average hydro generation based on YUB Order 2014-06.
L11	YEC Wind (expected)	238	MW.h	YEC 2012/13 GRA
L12=L9-L10-L11	YEC Grid load net of expected Fish Lake and Wind	446,632	MW.h	
L13	Expected Base Diesel Generation at 445 GW.h	27,500	MW.h	Derived from updated Table 1.1-1
L14=(L12-445 GW.h)x62%	Expected Incremental Diesel Generation at 1,632 MW.h above 445 GW.h	1,012	MW.h	62% of Load between 445 GW.h and 450 GW.h is diesel
L15=L13+L14	Total Expected YEC Diesel Generation	28,512	MW.h	
L16=L15	Expected YEC Diesel Generation in Rates	28,512	MW.h	100% of long-term average
L17=L7	Actual YEC Diesel Generation	35,000	MW.h	Assumed
L18=L17-L16	YEC Diesel Generation to be Included in DCF	6,488	MW.h	
L19=L1xL18	Incremental YEC Diesel Generation Cost to Charge (Refund) DCF ($000s)	$1,863		

Year 5 - Actual Wind and Fish Lake at Forecast; Actual Diesel Generation Below Expected

	Assumptions			
L2	YEC Grid load	461,000	MW.h	
L3	Fish Lake	8,730	MW.h	
L4=L2+L3	Total Grid load	469,730	MW.h	
	Assumed Actual Generation Sources			
L5	YECL Fish Lake	8,730	MW.h	
L6	YEC Hydro	425,762	MW.h	
L7	YEC Diesel (net of capital and insurance)	35,000	MW.h	
L8	YEC Wind	238	MW.h	
L9	Total Grid load	469,730	MW.h	
	Expected Generation Sources			
L10	YECL Fish Lake (expected)	8,730	MW.h	YECL Fish Lake long term average hydro generation based on YUB Order 2014-06.
L11	YEC Wind (expected)	238	MW.h	YEC 2012/13 GRA
L12=L9-L10-L11	YEC Grid load net of expected Fish Lake and Wind	460,762	MW.h	
L13	Expected Base Diesel Generation at 460 GW.h	37,400	MW.h	Derived from updated Table 1.1-1
L14=(L12-460 GW.h)x72%	Expected Incremental Diesel Generation at 762 MW.h above 460 GW.h	533	MW.h	72% of Load between 460 GW.h and 465 GW.h is diesel
L15=L13+L14	Total Expected YEC Diesel Generation	37,933	MW.h	
L16=L15	Expected YEC Diesel Generation in Rates	37,933	MW.h	100% of long-term average
L17=L7	Actual YEC Diesel Generation	35,000	MW.h	Assumed
L18=L17-L16	YEC Diesel Generation to be Included in DCF	- 2,933	MW.h	
L19=L1xL18	Incremental YEC Diesel Generation Cost to Charge (Refund) DCF ($000s)	($842)		

ATTACHMENT 2: RIDER E RATE SCHEDULE

Page 1 of 1
Effective: 2015 05 01
Supercedes:

RIDER E

DIESEL CONTINGENCY FUND RIDER

AVAILABLE: To all retail and major industrial electric services throughout the Yukon Territory.

APPLICABLE: To all retail and major industrial classes of service [not applicable to secondary sales].

RATE: Service will be rendered at the applicable rates with the following surcharge/(refund):

A refund of -0.43 ¢ per kW.h will be applied to all firm kWh consumed.

NOTE: Rider E will be applied to all firm kWh consumed for the period from May 1, 2015 to March 31, 2016.

Rider E does not apply to Rate Schedule 32 Secondary Energy.

APPENDIX A – SUPPORTING TABLES

Table A1: Revised DCF Calculation Actuals for 2012 and 2013, and Preliminary Actual for 2014

Line No						Notes
L1	Fuel Cost per kW.h	28.71	28.71	28.71	cents/kW.h	Compliance Filing Average Fuel cost

Calculation of Diesel Cost to Charge (Refund) DCF

2013 Preliminary actuals		2012 Actuals	2013 Actuals	2014 Preliminary Actuals		
	Assumptions					
L2	YEC Grid load	424,541	419,173	396,498	MW.h	Actual net of secondary sales (with losses)
L3	Fish Lake	3,388	3,687	10,247	MW.h	Fish Lake generation
L4=L2+L3	Total Grid load	427,929	422,860	406,745	MW.h	
	Assumed Actual Generation Sources					
L5	YECL Fish Lake	3,388	3,687	10,247	MW.h	Fish Lake generation
L6	YEC Hydro	421,039	416,987	394,595	MW.h	Residual as total generation less diesel and wind
L7	YEC Diesel	3,057	1,910	1,566	MW.h	Diesel
L7a	*YEC Diesel charged to capital*	*373*	*872*	*951*		Includes charged to RFID
L7b	*YEC Net Diesel*	*2,683*	*1,037*	*615*		
L8	YEC Wind	445	277	337	MW.h	Wind generation
L9	Total Grid load	427,929	422,860	406,745	MW.h	
	Expected Generation Sources					
L10	YECL Fish Lake (expected)	4,380	4,380	8,730	MW.h	Unit #2 at 4.380 GW.h - no Unit #1 generation in 2012 and 2013.
L11	YEC Wind (expected)	239	239	239	MW.h	
L12=L9-L10-L11	YEC Grid load net of expected Fish Lake and Wind	423,310	418,241	397,776	MW.h	
L13	Expected Base Diesel Generation at 420 GW.h/2012; 415 GW.h/2013; 395 GW.h/2014	14,100	11,800	4,400	MW.h	Derived from updated Table 1-1, Attachment 1
L14=(L12-420/415 GW.h)x46%	Expected Incremental Diesel Generation above 420/415/395 GW.h	1,522	1,491	888	MW.h	Derived from updated Table 1-1, Attachment 1
L15=L13+L14	Total Expected YEC Diesel Generation	15,622	13,291	5,288	MW.h	
L16=L15	Expected YEC Diesel Generation in Rates	15,622	13,291	5,288	MW.h	100% of long-term average
L17=L7	FYF YEC Diesel Generation	2,683	1,037	615	MW.h	Net of capital diesel
L18=L17-L16	YEC Diesel Generation to be Included in DCF	- 12,939	- 12,254	- 4,673	MW.h	
L19=L1xL18	Incremental YEC Diesel Generation Cost to Charge (Refund) DCF ($000s)	($3,715)	($3,518)	($1,342)		

Table A2: DCF Continuity Schedule

Table A2: DCF Continuity Schedule

Line	Activity	2012 ($000s)	2013 ($000s)	2014 ($000s)
A	**DCF Opening Balance[1]**	**$902**	**$4,628**	**$8,198**
B	Incremental Diesel Generation Cost to Charge/(Refund)[2] to DCF	($3,715)	($3,518)	($1,342)
C=B	Total DCF operation for YEC			
	YEC pays to DCF Fund	$3,715	$3,518	$1,342
	YEC withdraws from DCF Fund	$0	$0	$0
D=A+C	**DCF Ending Balance**	**$4,617**	**$8,146**	**$9,540**
E	**Interest on DCF Balance[3]**	**$11**	**$52**	**$87**
F=D+E	**DCF Ending Balance after Interest charge**	**$4,628**	**$8,198**	**$9,627**
G	**DCF Cap Approved by Board[4]**	**+/- $8,000**	**+/- $8,000**	**+/- $8,000**
H=F-G	**DCF Rebate/(Collections) Required**	**$0**	**$198**	**$1,627**
I	**DCF (Rebate)/Collections**	**$0**	**$0**	**$0**
J=H+I	**DCF Ending Balance**	**$4,628**	**$8,198**	**$9,627**

Notes:
1. DCF Opening Balance is 2011 actual ending balance of DCF.
2. Based on calculations in Table A1. 2014 DCF charge estimate is based on preliminary actuals.
3. Per the March 11, 1996 letter recording the settlements [provided as Exhibit B-16 in the 2008/2009 GRA] the DCF fund is to attract interest based upon the short/intermediate term bond rates in which the Companies may invest the fund and any negative balances would only attract interest at the lowest short-term borrowing rate available to the Companies through a line of credit.
4. Approved DCF Cap based on YUB Order 2015-01.

Table A3: DCF Rider Calculation

Line	Activity	Rider Estimate
A	**DCF Rebate/(Collections) Required ($000s)**	**$1,627**
B	Retail & Major Industrial Sales for the previous 12 months (MW.h) [1]	**379,518**
C=A/B	**DCF Refund Rider (cents/kW.h)**	**0.43**

Notes:

1. The total retail and major industrial sales include YEC and AEY retail sales based on 2014 preliminary actuals.

APPENDIX B: ERA IMPLEMENTATION & YEC ACTUAL DIESEL COSTS

Appendix B addresses ERA implementation as directed in Order 2015-01, starting with reference to providing a revised ERA based on YEC's actual diesel costs. Other ERA implementation issues are then addressed later in this appendix.

Summary Overview re Actual Diesel Costs References

Order 2015-01 directs that the revised ERA be based on YEC's "actual diesel costs".

However, Order 2015-01 provides two different references to YEC's "actual diesel costs":

1. **Reference A:** The DCF directions in section 2.1.1.4 reference YEC's actual diesel costs as the costs after DCF determinations, namely the costs of diesel generation assuming long-term average (LTA) hydro and wind generation for any specific grid load.[11] Actual diesel costs in Reference A are therefore the diesel costs used for YEC's income statement, revenue requirement and rates charged to customers.
2. **Reference B:** The ERA directions in section 2.2.1.4 reference YEC's actual diesel costs as the costs before DCF determinations, namely the costs for actual diesel generation before DCF charges or credits are made to take into account the impact of water and wind availability.[12] Actual diesel costs in Reference B are therefore not the costs used for YEC's income statement, revenue requirement and rates charged to customers. There is also no approved GRA forecast of actual diesel generation.

ERA implementation impacts have been examined separately in Table B1 for each of the above two references to YEC's actual diesel costs, assuming 2012 actual loads and two scenarios for water availability (actual water availability in 2012 and a scenario with assumed drought conditions).

In summary, as reviewed below, adoption of Reference B for YEC's actual diesel costs (i.e., before any DCF determinations) when implementing the ERA yields perverse impacts which YEC believes would be patently unacceptable to all stakeholders, including the Board. For example, when actual loads exceed GRA forecasts:

- Under drought conditions (where water availability is significantly less than LTA), double counting of DCF related diesel costs would occur, e.g., YEC would receive payments from both the DCF and from AEY (through the ERA) for the same added costs for actual diesel generation being higher than long-term average. And if AEY seeks to recover its ERA costs from ratepayers in this situation, ratepayer funds would be charged a second time for the amounts that YEC recovered from the DCF.

[11] In section 2.1.1.4, page 11 and 12 the Board quotes from YEC evidence which states that "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 Board specifies that "Any deviation between the expected diesel costs at LTA availability [determined based on YECSIM and actual grid loads] and actual diesel costs are then attributable to the DCF." Also, on page 4 the Board quotes from 2012/13 GRA hearing transcript which notes that "we're not going to have the company paying for diesel based on what it actually burns, but we're going to have it pay for diesel based on the long-term average".

[12] In section 2.2.1.4, page 23 references YEC's "actual diesel costs" as "the costs...for actual diesel generation costs, not forecast or derived costs from the YECSIM model".

- Under high water conditions (where water availability exceeds LTA), YEC would be unable to recover its added actual diesel costs, after DCF determinations, when AEY wholesales exceed the GRA forecast. One of the prime purposes of the ERA is to enable YEC to recover such costs when they occur.

In contrast, adoption of Reference A for YEC's actual diesel costs (i.e., after the DCF determinations) when implementing the ERA avoids the above unintended impacts on parties.

Table B1 Example (2012 loads with actual and assumed drought water conditions)

To show the impact of the two above "YEC actual diesel costs" references, Table B1 reviews ERA determinations with each reference based on actual 2012 loads and two water condition scenarios: (a) actual 2012 results for water availability; and (b) assumed potential drought impact (assumes diesel generation at 25,000 MW.h, which remains well below the 50,000 to 100,000 MW.h of diesel generation estimated to be required in an extreme drought).[13] The results provided in Table B1 are summarized below:

1. **Assume Reference B "actual diesel costs":** The column that shows "**Actual Diesel Costs" based on Actual Diesel Generation** shows the impact of an assumed drought year to the ERA estimate based on YEC's "actual diesel costs" before any DCF assessments to address water or wind variability from LTA.
    a. **Actual 2012 results:** When YEC's actual diesel generation is lower than the latest approved forecast (as occurred in 2012), YEC pays $3.715 million to the DCF;[14] however, if the ERA is based on actual diesel generation without reference to DCF determinations, there is no ERA charge (as AEY wholesale variance was positive while actual diesel was less than the approved GRA forecast).
        i. This ERA determination ignores the fact that YEC's DCF determination fully offsets the low diesel generation due to water availability being well above LTA, resulting in YEC paying for diesel requirements assuming LTA water availability.
        ii. This ERA determination therefore fails in this context (when water availability exceeds LTA) to recover the added diesel charges to YEC, after DCF determinations, when AEY wholesales exceed the GRA forecast.
    b. **Potential Drought impact:** In a drought year scenario where actual diesel generation is higher than the latest approved forecast as assumed in Tables B1 and B2, then based on YEC's actual diesel generation as assumed at 25 GW.h:
        i. AEY would pay $2.599 million to YEC for the ERA[15] and then presumably seek to collect most of this from ratepayers.[16]

[13] For example, the YEC Resource Plan Overview filed during the 2012/13 GRA showed diesel generation (assuming 2013 load forecast) exceeding 25 GW.h/yr in more than 25% of the water years, and years when diesel generation would range from 50 to 100 GW.h.
[14] See Table B2 for DCF determinations for actual 2012 results and for potential drought impacts case.
[15] See Table B1: assumes 17.074 GW.h added diesel generation over forecast, equal to 94.9% of the YEC grid load generation increase over forecast. The added AEY/YECL wholesales above approved forecast (net of Fish Lake generation impacts) is 13.272 GW.h plus 8.8% for losses, and 94.9% of this added AEY/YECL load is charged to added diesel generation (13.701 GW.h of added

- However, the ERA charged to AEY would be separate from (and in addition to) $2.692 million charged by YEC to the DCF to recover YEC diesel generation costs related to water availability as illustrated in Table B2.
- AEY would be charged for diesel costs related to water availability below LTA, for which the DCF would separately fully compensate YEC.
- YEC would therefore recover certain amounts twice (once from the DCF and separately again from the ERA).

ii. The total impact to ratepayers of both the DCF charge and any AEY recovery of its ERA charge could approximate $4.8 million ($2.692 million through the DCF plus $2.11 million through an AEY Deferral Account).

- In effect, ratepayers would then be charged twice for the portion of the AEY Deferral Account charge that reflects amounts YEC was recovering separately from the DCF ratepayer trust fund.

2. **Assume Reference A "actual diesel costs":** By contrast, the column with "**Actual Diesel Costs" based on Long-term Average** shows the impact of the same assumed drought year to the ERA estimate based on YEC's "actual diesel costs" on its income statement (after DCF assessments).

   a. **Actual 2012 results:** If the actual diesel generation is lower than the latest approved forecast (as occurred in 2012), YEC pays $3.715 million to DCF.

      i. Under this definition of YEC's actual diesel costs, there is an increase over forecast for both AEY wholesales and YEC grid load and therefore, per Order 2015-01, an ERA is applicable.

      ii. If the ERA is based on YEC actual diesel costs on its income statement (after DCF assessments), the resulting ERA would have AEY pay $0.439 million to YEC due to higher wholesale power purchases. YEC would therefore be compensated through the ERA for its added actual diesel costs attributable to AEY's wholesales exceeding the GRA approved forecast.

   b. **Potential Drought impact:** In a drought year scenario where actual diesel generation was higher than the latest approved forecast as assumed in Tables B1 and B2, then based on YEC's actual diesel generation as assumed at 25 GW.h and an ERA that reflects YEC's actual diesel costs on its income statement (after DCF determinations):

      i. The ERA charged to AEY would not change from what occurs without a drought, and AEY would still pay only $0.439 million ERA charge, i.e., the ERA would not be affected by the drought.

diesel generation attributed to AEY/YECL); at $0.2871/kW.h fuel cost, this results in an attributed added YEC cost of $3.933 million. The ERA charged to AEY/YECL is reduced by the related added revenue from all added wholesales over forecast of $1.335 million.

[16] Impacts on AEY would net about $2.110 million added cost, after consider all incremental revenue impacts (estimated at $1.672 million for 2012 example) and incremental cost impacts (estimated at $3.783 million, including ERA and 8.298 c/kW.h for base charge) from the added wholesales which result in ERA charge.

ii. YEC would withdraw $2.692 million from DCF.

iii. The total impact to ratepayers would be limited to $2.6 million through the DCF.

iv. Accordingly, no double counting diesel cost impacts occur for any party.

The following table summarizes the above assessments (see Table B1 for details):

	YEC Costs ($million)	
	Assumed Drought	**2012 Actual**
Reference B (before DCF)		
ERA	**- 2.599**	**-**
DCF	**- 2.692**	**3.715**
Reference A (after DCF)		
ERA	**- 0.439**	**- 0.439**
DCF	**- 2.692**	**3.715**

Other Considerations for ERA Implementation

Order 2015-1 directs as follow regarding implementation of a revised ERA mechanism going forward:

> "In its compliance filing to this decision, YEC is to provide a revised ERA that is based on actual diesel costs. That is, if actual diesel costs are higher than the levels of diesel contained in YEC's latest approved forecast, then those costs which are attributable to YECL's wholesale purchases that are in excess of those in the last approved forecast will become billable to YECL. The converse is also true: a credit applies when diesel costs are lower and that reduction in cost relates to YECL wholesale loads being less than forecast. Further, in the event ERA costs are billable to YECL, YEC must provide those charges to YECL within 30 days of the close of the year to which those charges relate."

Aside from the key issues related to impacts from the Order's two different references to YEC's actual diesel generation, the above direction in summary specifies the following four steps to be followed:

1. **Determine YEC's "actual diesel costs" for the year**. The issues to be resolved for this key step have been reviewed above. In order to avoid unintended outcomes, YEC's actual diesel costs are per Reference A (i.e., after DCF determinations).
2. **Determine if YEC's "actual diesel costs" are higher than "the levels of diesel" contained in YEC's latest approved forecast (or are lower than in the latest approved forecast).** The following are noted with regard to this step:
    a. YEC's only approved GRA forecast is for "expected diesel generation", based on LTA water availability as derived from the YECSIM model and the GRA grid load forecast. There is no approved GRA forecast of actual diesel generation.

b. The gap between the approved GRA forecast and YEC's "actual diesel costs" based on Reference A will reflect the change in YEC grid load and its impact on YEC's LTA expected diesel generation.

3. **Determine if AEY's wholesale purchases varied from the last approved forecast, and if this variance was in the same direction as YEC's actual diesel cost variance from the last approved forecast**. The following are noted with regard to this step:

   a. AEY wholesales are forecast in the GRA assuming Fish Lake generation at LTA, while AEY's actual wholesales reflect the impact of AEY customer load changes as well as variances in Fish Lake generation from LTA.

   b. Variances in Fish Lake generation from LTA are addressed in the DCF determination.

   c. Accordingly, it is concluded that the relevant variance in AEY wholesale purchases from the last approved forecast is to be based on AEY's actual wholesale purchases adjusted to reflect Fish Lake generation at LTA.

4. **If an ERA is determined to be potentially applicable [based on test in #3], then determine those actual diesel cost increase or decreases of YEC that are "attributable to" (or that "relates to") the variance in AEY wholesale purchase from the last approved forecast (per #3).** The following are noted with regard to this step:

   a. If YEC "actual diesel costs" are based on Reference A (expected diesel generation after DCF determination), YEC's changes in diesel cost reflect only the impact of grid load changes from the last approved forecast - and the ERA will reflect only the impacts attributable to AEY.

Order 2015-1 does not specifically address the need, when an ERA is determined under Rate Schedule 42, to also determine YEC's "net cost impact" attributable to AEY after changes in wholesale revenues related to the variance in wholesale purchases from the last approved forecast. Based on past practice, and basic principles, Yukon Energy has assumed that this last step continues to be required.

Conclusions re: ERA Implementation

In summary, based on the above analysis, the interpretation of "actual diesel costs" that is consistent with the references in the Decision and which does not result in unintended outcomes is the one used by the Board in Section 2.1.1.4, more particularly:

- YEC's actual diesel costs based on DCF determinations must be considered in order to implement the Board's direction to determine the ERA based on the portion of the actual diesel cost variance that can be attributed to the AEY wholesale purchase variance from the approved wholesale forecast. More specifically, DCF determinations are required to assess the portion of YEC's actual diesel cost variance that is due to variance in water variability from LTA versus changes in AEY wholesale purchases relative to approved wholesale forecasts; and

- In addition, as recognized in Order 2015-01 at page 12, YEC's diesel costs after DCF determinations[17] are now the actual costs that YEC shows on its books and in its reports to the YUB. In contrast, differences in costs resulting from differences between actual diesel generation and LTA generation are now borne by or benefit to ratepayers (not by YEC) through the DCF.

Accordingly, ERA determinations for 2012, 2013 and 2014 are provided in Table B3 based on YEC's "actual diesel costs" as reflected in its income statement after consideration of DCF assessments for each year.

The following summary example for 2012 highlights the steps in the ERA determination for that year as directed in Order 2015-01 (see Table B):

1. YEC's actual diesel costs for 2012:
    - Based on expected diesel generation at actual 2012 grid load.
    - Equals 15.622 GW.h times $0.2871/kW.h=**$4.485 million.**
2. YEC's actual diesel costs were higher than GRA forecast of 7.926 GW.h:
    - YEC's actual load (firm) was **17.995 GW.h** higher than GRA forecast.
    - The added expected diesel generation due to higher load = 15.622-7.926=**7.696 GW.h** (line "I" in Table B).
    - Incremental diesel as a share of the added load = **7.696/17.995=42.78%** (line "J" in Table B).
    - Added actual diesel cost due to higher load = 7.696 times $0.2871=**$2.2095 million.**
3. Wholesales to AEY were also higher than YEC's GRA forecast:
    - AEY wholesale load variance in same direction as YEC grid load, therefore ERA applies.
    - Added wholesale load = 14.264 GW.h including Fish Lake generation impact.
    - Added wholesale load = **13.272 GW.h** net of Fish Lake generation impact (per line "P" in Table B).
    - Added YEC generation impact=13.272 times 1.088 for losses = **14.440 GW.h.**
4. Share of added YEC actual diesel cost attributable to AEY:
    - The share of YEC incremental diesel attributed to AEY added wholesale load=42.78% times 14.440 GW.h = **6.176 GW.h** (per line "R" in Table B).
    - Added cost to YEC to be included in ERA = 6.176 times $0.2871=**$1.773 million** (line "S" in Table B).
5. Provide for offset for related change in YEC revenues due to added AEY wholesales:

[17] That is, diesel costs that reflect GRA approved diesel generation forecasts based on specified water forecast [LTA] assumptions and not actual YEC generation.

- Added wholesales including Fish Lake impact = 14.264 GW.h.
- Added YEC revenues = 14.264 times $0.09359/kW.h = **$1.335 million** (line "U" in Table B).

6. ERA charged to AEY = $1.773-$1.335=**$0.439 million** after rounding (line "V" and "W" in Table B).

Due to the need to utilize DCF determinations when finalizing the ERA for any year, it will not be feasible to provide the ERA to AEY within 30 days of year end. It is therefore proposed that the ERA be determined concurrent with the DCF within 60 days of year end.

Table B: Summary ERA : Actuals for 2012 [actual diesel cost after DCF]

		2012	
Step 1:	Diesel Generation (MW.h)		
	Actual diesel generation (excludes DCF impact and diesel charged to capital & insurance)	2,683	A - per Table A1 (DCF), L7b
	Actual diesel related to DCF - paid to (withdrawn from) DCF	12,939	B - per Table A1 (DCF), -L18
	Total Diesel Generation	15,622	C=A+B
	Actual Diesel Cost ($000)	**4,485**	D=C*0.2871
Step 2:	Total YEC's actual generation net of secondary, LTA wind &FL	423,310	E - per Table A1 (DCF), L12
	GRA approved load forecast, net of expected wind	405,314	F
	Total YEC incremental generation relative to GRA approved (MW.h)	**17,995**	G=E-F
	Expected diesel generation at GRA load (approved)	7,926	H
	Total YEC expected incremental diesel generation (MW.h)	**7,696**	I=C-H
	Incremental Diesel in Base Rates (see Note 5)	**42.8%**	J=I / G
	Added Actual Diesel Cost ($000)	**2,210**	K=I*0.2871
Step 3:	GRA approved wholesales	296,000	L
	Actual wholesales	310,264	M
	Incremental (MW.h)	14,264	N=M-L
	Less: Fish Lake Impact	992	O
	Incremental wholesales net of Fish Lake (MW.h)	**13,272**	P=N-O
	Incremental Generation for wholesales (MW.h)	**14,440**	Q=P*1.088
Step 4:	Generation Variance Charged for Diesel Cost (MW.h)	**6,176**	R=Q*J
	Added cost to YEC from incremental wholesales ($000)	**1,773**	S=R*0.2871
	Impacts on YEC		
	Added Cost	1,773	T=S
Step 5:	Added Revenue	**1,335**	U=If R=0 then 0, otherwise N*(8.298+average rider)
	Net Impact on YEC	- 439	V=U-T
Step 6:	ERA charge/(rebate) to AEY	**439**	W=-V [if V<0]

Table B1: Comparison of ERA Calculation: "Actual Diesel Costs": based on Long-term Average versus Actual Diesel Generation

	"Actual Diesel Costs" based on Actual Diesel Generation		"Actual Diesel Costs" based on Long-term Average			
	2012	**2012 With Drought Year**	**2012**	**2012 With Drought Year**		
Diesel Generation						
Actual diesel generation (excludes DCF impact and diesel charged to capital & insurance)	2,683	25,000	2,683	25,000	MW.h	A - per Table A1 (DCF), L7b
Actual diesel related to DCF - paid to (withdrawn from) DCF			12,939	-9,378	MW.h	B - per Table A1 (DCF), -L18
Total Diesel Generation	2,683	25,000	15,622	15,622	MW.h	C=A+B
Expected diesel generation at GRA load (approved)	7,926	7,926	7,926	7,926	MW.h	D
Total YEC expected incremental diesel generation	-5,243	17,074	7,696	7,696	MW.h	E=C-D
Total YEC's actual generation net of secondary, LTA wind &FL	423,310	423,310	423,310	423,310	MW.h	F - per Table A1 (DCF), L12
GRA approved load forecast, net of expected wind	405,314	405,314	405,314	405,314	MW.h	G
Total YEC incremental generation relative to GRA approved	17,995	17,995	17,995	17,995	MW.h	H=F-G
Incremental Diesel in Base Rates	-29.1%	94.9%	42.8%	42.8%		I=E/H
GRA approved wholesales	296,000	296,000	296,000	296,000	MW.h	J
Actual wholesales	310,264	310,264	310,264	310,264	MW.h	K
Incremental	14,264	14,264	14,264	14,264	MW.h	L=K-J
Less: Fish Lake Impact	992	992	992	992	MW.h	M
Incremental net of Fish Lake	13,272	13,272	13,272	13,272	MW.h	N=L-M
Generation Variance Charged for Diesel Cost	0	13,701	6,176	6,176	MW.h	O=N*I*Losses
Impacts on YEC						
	ERA Based on All Incremental Wholesale (100%)					
Added Cost	-	3,933	1,773	1,773	$000	P=O*28.71
Added Revenue	-	1,335	1,335	1,335	$000	Q=If O=0 then 0, otherwise L*(8.298+average rider)
Net Impact on YEC	- -	2,599 -	439 -	439	$000	R=Q-P
ERA charge/(rebate) to AEY	-	2,599	439	439	$000	S=-R [if R<0]

Table B2: Drought Year Example for DCF

Line No					Notes
L1	Fuel Cost per kW.h	28.71	28.71	cents/kW.h	Compliance Filing Average Fuel cost

Calculation of Diesel Cost to Charge (Refund) DCF

		2012 Actuals	2012 Assuming Drought Year		
	Assumptions				
L2	YEC Grid load	424,541	424,541	MW.h	Actual net of secondary sales (with losses)
L3	Fish Lake	3,388	3,388	MW.h	Fish Lake generation
L4=L2+L3	Total Grid load	427,929	427,929	MW.h	
	Assumed Actual Generation Sources				
L5	YECL Fish Lake	3,388	3,388	MW.h	Fish Lake generation
L6	YEC Hydro	421,039	399,095	MW.h	Residual as total generation less diesel and wind
L7	YEC Diesel	3,057	25,000	MW.h	Diesel
L7a	*YEC Diesel charged to capital*	*373*			Includes charged to RFID
L7b	*YEC Net Diesel*	*2,683*	*25,000*		
L8	YEC Wind	445	445	MW.h	Wind generation
L9	Total Grid load	427,929	427,929	MW.h	
	Expected Generation Sources				
L10	YECL Fish Lake (expected)	4,380	4,380	MW.h	Unit #2 at 4.380 GW.h - no Unit #1 generation in 2013.
L11	YEC Wind (expected)	239	239	MW.h	
L12=L9-L10-L11	YEC Grid load net of expected Fish Lake and Wind	423,310	423,310	MW.h	
L13	Expected Base Diesel Generation at 420 GW.h/2012	14,100	14,100	MW.h	Derived from updated Table 1-1, Attachment 1
L14=(L12-420/415 GW.h)x46%	Expected Incremental Diesel Generation above 420 GW.h	1,522	1,522	MW.h	Derived from updated Table 1-1, Attachment 1
L15=L13+L14	Total Expected YEC Diesel Generation	15,622	15,622	MW.h	
L16=L15	Expected YEC Diesel Generation in Rates	15,622	15,622	MW.h	100% of long-term average
L17=L7	FYF YEC Diesel Generation	2,683	25,000	MW.h	Net of capital diesel
L18=L17-L16	YEC Diesel Generation to be Included in DCF	- 12,939	9,378	MW.h	
L19=L1xL18	Incremental YEC Diesel Generation Cost to Charge (Refund) DCF ($000s)	($3,715)	$2,692		

Table B3: Revised ERA Calculation Based on YUB Order 2015-01: Actuals for 2012-2014 [Actual Diesel Cost after DCF]

	2012	2013	2014 Preliminary		
Diesel Generation					
Actual diesel generation (excludes DCF impact and diesel charged to capital & insurance)	2,683	1,037	615	MW.h	A - per Table A1 (DCF), L7b
Actual diesel related to DCF - paid to (withdrawn from) DCF	12,939	12,254	4,673	MW.h	B - per Table A1 (DCF), -L18
Total Diesel Generation	15,622	13,291	5,288	MW.h	C=A+B
Expected diesel generation at GRA load (approved)	7,926	11,006	11,006	MW.h	D
Total YEC expected incremental diesel generation	7,696	2,285	-5,718	MW.h	E=C-D
Total YEC's actual generation net of secondary, LTA wind &FL	423,310	418,241	397,776	MW.h	F - per Table A1 (DCF), L12
GRA approved load forecast, net of expected wind	405,314	416,148	416,148	MW.h	G
Total YEC incremental generation relative to GRA approved	17,995	2,093	-18,372	MW.h	H=F-G
Incremental Diesel in Base Rates (see Note 5)	42.8%	109.2%	31.1%		I=E/H
GRA approved wholesales	296,000	307,147	307,147	MW.h	J
Actual wholesales	310,264	307,927	295,284	MW.h	K
Incremental	14,264	780	-11,863	MW.h	L=K-J
Less: Fish Lake Impact	992	693	-1,517	MW.h	M
Incremental net of Fish Lake	13,272	86	-10,346	MW.h	N=L-M
Generation Variance Charged for Diesel Cost	6,176	103	- 3,465	MW.h	O=N*I*Losses
Impacts on YEC					
	ERA Based on All Incremental Wholesale (100%)				
Added Cost	1,773	30	- 995	$000	P=O*28.71
Added Revenue	1,335	78	- 1,185	$000	Q=If O=0 then 0, otherwise L*(8.298+average rider)
Net Impact on YEC	- 439	48	- 190	$000	R=Q-P
ERA charge/(rebate) to AEY	439	-	- 190	$000	S=-R [if R<0]

Notes:

1. YEC's approved wholesale and generation numbers are based on YEC's 2012/13 GRA Revised Compliance Filing (includes WHCT related sales).

2. Fish Lake impact is calculated as the difference between expected hydro generation (4.38 GW.h Unit #2; no Unit #1 generation in 2012 and 2013) and actual generation.

3. YEC's load on Line F is net of secondary sales and related losses, and net of expected wind and expected Fish Lake generation.

4. Added revenue for YEC is calculated at wholesale rates plus estimated rider revenues (at 1.058 cents/kW.h for 2012; at 1.69 cents/kW.h for 2013 and 2014) estimated based on YEC Compliance Filing for 2012/13 GRA.

5. Change in expected diesel generation reflects no WHCT load in 2013, and resulting need to retain updated Table 1.1-1 (2012 DCF), which has higher expected diesel for load without WHCT than forecast in Table 1.1-2 (January 31, 2014 YEC's Revised DCF Proposal).