



**YUKON
ENERGY**

YUKON ENERGY CORPORATION

YUKON ENERGY CORPORATION ("YEC") ENERGY
RECONCILIATION ADJUSTMENT ("ERA") – PART 1 APPLICATION

INTERROGATORY RESPONSES FILED

February 23, 2018

**ATCO Electric Yukon
(AEY)**

1 **TOPIC:** YECSIM

2

3 **REFERENCE:** "Being a planning model, YECSIM (as well as similar planning models
4 such as Manitoba Hydro's SPLASH model) is not structured in a way
5 that lends itself to retrospective verification per se. A detailed
6 verification of a test year has not been made, for example, and such a
7 verification or "test" would not normally be seen as a verification that is
8 required or appropriate for this type of a planning model.

9

10 However, the model is a composite of many sub-models that combine
11 to provide an accurate representation of the YEC power system under
12 a variety of hydrological conditions. The accuracy of individual
13 components of the model, such as energy generation for given flows
14 and heads, has been verified individually. These are known to be
15 accurate representations of the real phenomenon. Model inputs such
16 as spillway discharge rating curves have been based on and verified
17 with actual data."

18

19 *YUB-YEC-1-3, Application to Revise the DCF & Related amendments*
20 *to the ERA, August 19, 2014*

21

22 **PREAMBLE:**

23

24 AEY is interested in clarifying the use of the YECSIM model.

25

26 **QUESTION:**

27

28 a) Please confirm that YECSIM is used to derive diesel generation costs for the DCF,
29 and that the ERA is also affected by the YECSIM derivation of diesel generation
30 costs.

31

32 b) Please confirm YECSIM cannot be retroactively verified. If not confirmed, please
33 explain.

1 c) If (b) is confirmed, please comment on the Board's ability to provide regulatory
2 oversight of material costs derived from YECSIM that cannot be retroactively
3 verified.

4

5 **ANSWER:**

6

7 **(a)**

8

9 Not confirmed. YECSIM does not "derive diesel generation costs for the DCF".

10

11 YECSIM is used to derive the DCF Term Sheet Table, e.g., the Table 3.4-1 included in
12 Appendix 3.4 of the YEC 2017-18 GRA. The DCF Term Sheet Table is then used for the
13 purpose of determining the **volume (KWh) of LTA diesel generation** for any given load.

14

15 For the purposes of determining the forecast **diesel generation costs** for a GRA -- the
16 DCF Term Sheet Table is used to determine the **volume of LTA diesel generation**
17 necessary to meet the forecast load. Once that amount of diesel generation is known, then
18 the amount of **diesel generation costs** can be calculated based on GRA-approved unit
19 rates for diesel generation.

20

21 The ERA is determined each year based (in part) on: (1)YEC's final thermal generation
22 costs calculated using the **actual** grid load for the year and the approved DCF Term Sheet
23 Table; and (2) changes from the forecast thermal generation costs calculated using the
24 approved GRA **forecast** grid load and the DCF Term Sheet Table.

25

26 **(b)**

27

28 As noted previously, LTA hydro model estimates using any water model (including
29 YECSIM) are not structured in a way that lends to retrospective verification per se. [See
30 response to YUB-YEC-1-3(c) from the 2014 DCF/ ERA Proceeding; YUB-YEC-1-49 from
31 the 2017/18 GRA; and Appendix 3.4 page 3.4-26 of the 207/18 GRA.]

32

33 Further, and as reviewed in detail in Attachment 3.4.3 of the 2017/18 GRA, a long term
34 planning model such as YECSIM does not replicate actual past short term operational
35 decisions nor is it used to address future short term operational planning. YECSIM is
36 designed to provide LTA estimates of hydro and thermal generation on a weekly time step

1 basis, and to address on a consistent basis the range of known water conditions that have
2 been recorded to date.

3
4 The following have been noted in current and prior proceedings regarding model
5 verification or testing:

- 6
7 • Detailed test year verifications are not typically undertaken because amongst other
8 things such verification is neither required nor appropriate for this type of planning
9 model. LTA hydro system simulation models such as YECSIM examine the full
10 range of recorded water conditions in order to provide a meaningful LTA estimate
11 of hydro and residual thermal generation for a specified load and set of system
12 conditions and rules – neither the LTA output, nor the simulation of specific water
13 year conditions, are suited to verification testing by comparison with past year
14 operations. Assessment of models such as YECSIM focuses on the extent to
15 which the model design reflects the key features and conditions of the applicable
16 hydro generation system.
- 17
18 • The structure of the YECSIM model was custom-made by KGS Group to take into
19 account all significant factors that affect the operation of the YEC power system
20 including complex rules of operation and regulatory demands on YEC. [See also
21 response to YUB-YEC-1-3(a) from the 2014 DCF/ERA proceeding. This response
22 also notes KGS Group staff has been actively involved in understanding and
23 applying similar models used for similar purposes in other hydro-thermal electric
24 power systems.]
- 25
26 • Key features related specifically to YECSIM are reviewed at pages 3.4-25 to 3.4-
27 29 of YEC's 2017-18 GRA. "Testing" has focused on verifying the accuracy of
28 individual components of the model, including algorithms that compute power
29 generation at each facility based on differential water levels at each structure
30 based on YEC's known operational rules. YEC's confidence in the model's outputs
31 is based on consideration of all of these factors as well as ongoing adjustments to
32 reflect new information affecting specific elements of the hydro grid.
- 33
34 • Actual system operation will differ from planning model simulations in that they will
35 be in response to operator assessments of, and responses to, specific conditions.
36 Planning models provide a consistent basis to simulate the system operation within

1 the conditions imposed by physics, regulation and operational priorities, in order
2 to supply the estimated loads with the available hydrologic inputs. Such
3 simulations are required for long-term evaluation of system operation under
4 different loads and with varying generation resource options.

5

6 **(c)**

7

8 Whether or not YECSIM can be “retroactively verified” does not prevent the Board from
9 providing regulatory oversight regarding Yukon Energy LTA thermal costs and subsequent
10 ERA charges to AEY.

11

12 Regardless of the model or forecast used to determine grid thermal generation
13 requirements and related expense, the key requirement is consistent application and
14 implementation for GRA test years and for determining subsequent diesel generation
15 requirements and costs charged to YEC at each year end.

16

17 During each GRA, the adoption of LTA estimates and the related DCF Term Sheet Table
18 are subject to regulatory oversight regarding YECSIM model parameters and consistency
19 with current known conditions.

20

21 Regulatory oversight is expected to ensure that the forecast methodology used in the GRA
22 is consistently applied to determine diesel generation costs at year end. In that regard, the
23 Board has the opportunity to review the DCF Term Sheet Table [Table 3.4-1]; ask any
24 questions regarding how it is derived [including questions regarding specific model inputs/
25 assumptions and to obtain and assess details regarding model outputs] and to test the
26 manner in which thermal generation costs are calculated to determine: (1) GRA test year
27 thermal generation forecast requirements (forecast amount of thermal generation and
28 thermal generation costs); and (2) actual thermal generation requirements at the end of
29 the year (actual amount of thermal generation and thermal generation costs).

30

31 YECSIM’s accuracy in estimating LTA hydro generation affects the DCF Term Sheet
32 Table as well as test year revenue requirements approved by the Board. However, YEC’s
33 final diesel generation costs are determined solely by the DCF Term Sheet Table
34 approved by the Board.

1 **TOPIC:** ERA

2

3 **REFERENCE:** “[7] Rate-setting is an inherently forward-looking exercise.”

4

5 *2017 YKCA 15 Yukon Energy Corporation v. Yukon (Utilities Board)*
6 *Page 4 of 20*

7

8 “[26] The ERA is another Board-approved stabilization mechanism
9 which addresses variances from Yukon Energy’s forecast costs of
10 diesel generation. Whereas the DCF addresses variable water
11 conditions, the ERA addresses variances from forecast wholesale
12 purchases. Established in 1993, **it is a retrospective payment**
13 **calculation** designed to ensure that Yukon Electrical receives a full
14 pass-through of all incremental costs or savings of diesel generation
15 attributable to higher or lower than forecast wholesale demand. Like the
16 DCF, the ERA was long inactive due to hydro generation exceeding
17 wholesale demand.” **[emphasis]**

18

19 *2017 YKCA 15 Yukon Energy Corporation v. Yukon (Utilities Board)*
20 *Page 7 of 20*

21

22 **PREAMBLE:**

23

24 AEY is clarifying YEC’s understanding of who bears the ultimate responsibility for ERA
25 costs.

26

27 **QUESTION:**

28

29 a) Please confirm YEC agrees that the ERA is a retrospective payment calculation.

30

31 b) Please comment on YEC’s views on how all ERA costs should be flowed-through
32 and recovered from all Yukon ratepayers.

1 **ANSWER:**

2

3 **(a) and (b)**

4

5 Confirmed. As noted in the Court of Appeal Decision, the ERA is a retrospective payment
6 calculation (i.e., it is calculated after the actual results for each year) designed to ensure
7 that Yukon Electrical (AEY) receives a full pass-through of all incremental costs or savings
8 of diesel generation attributable to higher or lower than forecast wholesale demand.

9

10 Pursuant to the ERA provisions included in the proposed Rate Schedule 42 [included as
11 Appendix 1.1 of the ERA Part 1 filing], AEY's wholesale primary bill would be adjusted at
12 the end of each calendar year by an amount equal to any increase (or reduction) in YEC
13 thermal generation costs, net of related changes in wholesale revenues, due to actual
14 wholesale purchases exceeding or falling short of YEC's most recent approved test year
15 forecast wholesale purchases.

16

17 On the matter of AEY's costs flowing through to all Yukon ratepayers, it is understood that
18 AEY has an approved purchase power flow through deferral account that would be used
19 by AEY to flow these incremental costs through to Yukon ratepayers, although the specific
20 approach to collection/refund has not yet been approved by the Board.

1 **TOPIC:** Changes to ERA

2

3 **REFERENCE:** “The increase of \$62,000 from the \$439,000 amount estimated in
4 YEC’s April 7, 2015 ERA filing, and referenced in the Yukon Court of
5 Appeal Order, is entirely due to refinements in the revenue impact
6 assessments. No changes exist in the thermal cost impact
7 assessments.”

8

9 *Part 1: 2012-2016 Page 1-5*

10

11 “[66] In 2012, Yukon Energy made the additional \$439,000 net DCF
12 payment attributable to Yukon Electrical’s above-forecast wholesale
13 purchases into the DCF trust fund in which it has no beneficial interest.
14 The payment was made because it was obligatory under Board-
15 approved DCF rules, even though Yukon Energy was able to meet
16 almost all the excess wholesale load through hydro generation due to
17 the better than long-term average forecast water conditions. In other
18 words, Yukon Energy was required by a Board-approved mechanism
19 to pay an additional \$439,000 into the DCF for the above-forecast
20 electricity purchased by Yukon Electrical even though it did not pay that
21 \$439,000 in “actual” diesel generation costs.”

22

23 *2017 YKCA 15 Yukon Energy Corporation v. Yukon (Utilities Board)*

24

25 **PREAMBLE:**

26

27 AEY is concerned about changes to the ERA amount. As recently as last year, YEC was
28 using \$439,000.

29

30 **QUESTION:**

31

32 a) Please provide an excel file showing the previous \$439,000 derivation.

33

34 b) Please confirm that YEC is changing the methodology for determining the ERA
35 charge.

- 1 c) When did YEC discover that “refinements in revenue impact assessments” were
2 required?
3
- 4 d) Were there any changes to the DCF resulting from the “refinements in revenue
5 impact assessments”? If so, please provide details and calculations in excel.
6
- 7 e) Please provide an excel schedule showing the previous revenue impact
8 calculations and the current revenue impact calculations. Please include all
9 relevant, linked data in the excel file.
10
- 11 f) Does YEC foresee further adjustments to the 2012 ERA and DCF in the future? If
12 so, how often and what process will YEC undertake to review and/or adjust the
13 historical ERA and DCF and change the amounts? Please provide any relevant
14 criteria for review such as materiality thresholds. Please also discuss how
15 retrospective adjustments can be verified if they will occur in the future.
16

17 **ANSWER:**

18
19 **(a) and (e)**

20
21 Please see AEY-YEC-1-3 Attachment 1 for the calculation of the ERA for 2012 that was
22 included in YEC’s April 7, 2015 Board Order 2015-01 Compliance Filing.
23

24 The excel file includes detailed calculations for both the previous ERA determination of
25 \$439,000 and the revised ERA determination of \$501,000 included in the ERA Part 1
26 Filing, including revenue impacts.
27

28 **(b)**

29
30 There is no methodology change. There was an error in the Rider J revenue estimates for
31 2012 used for determining the ERA charge. The estimates for revenue impacts have been
32 corrected to reflect more accurately the actual conditions.
33

34 As indicated in pages 1-3 through 1-6 of the ERA Part 1 Application the revised ERA
35 amount for 2012 relates to the correction in the revenue impact assessments. The
36 correction reflects use of the actual rider charges in 2012 rather than an estimate for all of

1 2012 based on the full revenue shortfall of 6.85% [the impact is about \$52,000]; and also
2 reflects the fact that YEC Rider J revenue does not change due to wholesales changes
3 related only to Fish Lake variances from LTA [the impact is about \$10,000].
4

5 Please see the response to YUB-YEC-1-3 for a more detailed review of the changes in
6 the ERA amount for 2012.
7

8 **(c)**
9

10 The correction was made during preparation of the ERA Part 1 Application.
11

12 **(d)**
13

14 The correction noted in (b) above does not result in any impact to the DCF calculations.
15 The correction to the revenue impact assessments had no relationship as such to DCF
16 calculations, and related only to the corrections noted in response to (b) above.
17

18 **(f)**
19

20 No further adjustments to 2012 ERA charges are expected. As noted, there are no
21 changes to the DCF charge for 2012.
22

23 The adjustment in this instance for 2012 ERA charges are based on correction of earlier
24 estimates based on specified facts (relating to Rider J revenues to YEC) applicable to the
25 actual wholesale changes. Any such adjustments for other years in future will remain
26 subject to review and verification by the Board.

AEY-YEC-1-3 Attachment 1

ERA Determination for 2012 as provided in April 7, 2015 Compliance Filing

	2012		
GRA approved wholesales	296,000	MW.h	A
Actual wholesales	310,264	MW.h	B
Incremental	14,264	MW.h	C=B-A
Less: Fish Lake Impact	992	MW.h	D
Incremental net of Fish Lake	13,272	MW.h	E=C-D
Total YEC's actual generation net of secondary, LTA wind & FL	423,310	MW.h	F
GRA approved load forecast, net of expected wind	405,314	MW.h	G
Total YEC incremental generation relative to GRA approved	17,995	MW.h	H=F-G
Expected diesel generation at actual load	15,622	MW.h	I
Expected diesel generation at GRA load (approved)	7,926	MW.h	J
Total YEC expected incremental diesel generation	7,696	MW.h	K=I-J
Incremental Diesel in Base Rates	42.77%		L=K/H
Generation Variance Charged for Diesel Cost	6,176	MW.h	M=E*L*Losses
Impacts on YEC			
ERA Based on All Incremental Wholesale (100%)			
Added Revenue	1,335	\$000	If M=0, then "0"; otherwise, N=C*(8.298+average rider)
Added Cost	1,773	\$000	O=M*28.71
Net Impact on YEC	-	439 \$000	P=N-O
ERA charge to YECL	439	\$000	Q=(-P)

Notes:

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

Table 1-1: ERA Determination for 2012 [from December 6, 2017 Application]

	2012	
A Wholesales Variance for AEY (MW.h)		
Actual wholesales	310,264	A1
GRA approved wholesales assuming Fish Lake LTA generation	296,000	A2 [See note 1]
Fish Lake generation adjustment (expected LTA less actual)	992	A3 [See note 2]
Change in wholesales for ERA	13,272	A4=A1-A2-A3
B YEC Cost Impact per kW.h change in Wholesales		
Losses (%)	8.80%	B1 [Table 2.2 GRA]
Total YEC's actual generation net of secondary, LTA wind & FL (MWh)	423,310	B2 [See note 2]
GRA approved load forecast, net of expected wind (MWh)	405,314	B3 [See note 1]
YEC incremental generation relative to GRA approved (MW.h)	17,995	B4=B2-B3
YEC's actual LTA Thermal Generation (MWh)	15,622	B5 [See note 2]
GRA LTA Thermal Generation (MWh)	7,926	B6 [See note 1]
YEC Incremental thermal generation relative to GRA approved (MWh)	7,696	B7=B5-B6
Incremental thermal generation for incremental total generation (%)	42.77%	B8=B7/B4
Thermal Generation cost per GRA (\$/kW.h)	0.2871	B9 [See note 1]
YEC thermal cost change (\$/kWh wholesales)	0.1336	B10=B9*B8*(1+B1)
C YEC Revenue Impact per kW.h change in Wholesales		
Rate Schedule 42 Energy Charge (\$/kW.h wholesales)	0.08298	C1
Average YEC rider applicable to AEY retails (\$/kWh wholesales)	0.00663	C2 [See note 3]
D Net thermal cost impact on YEC (\$000)		
Wholesale Change: Cost Impact (YEC thermal generation costs)	1,773	D1=A4*B10
Wholesale Change: Revenue Impact (YEC revenues)	1,272	D2=A4*(C1+C2)+A3*C1
Cost change>revenue change ("Yes"=1, "No"=0)	1	D3=is D1>D2 (absolute)
ERA Charge (rebate) to AEY [Net added cost (cost saving) for YEC]	501	D4=D3*(D1-D2)

Notes:

1. Compliance Filing re: Board Order 2013-01, as approved by Board Order 2013-03.
2. Table 1 to DCF Annual Filing for 2016 (which includes records for 2012 to 2016): copy provided in Appendix 3.5 to YEC 2017-2018 GRA.
3. YEC Rider J and R revenues from AEY retail customers, divided by wholesales net of Fish Lake adjustments, each number for last six months of 2012 (when Rider J applicable); applied to 71.8% of change in wholesales (portion in last six months of 2012).

City of Whitehorse
(CW)

1 **TOPIC:** ERA Determination for 2012

2

3 **REFERENCE:** Table 1-1: ERA Determination for 2012

4

5 **PREAMBLE:**

6

7 In Table 1-1, YEC provides the calculation of the ERA change for 2012. CW requires
8 information to understand the calculations.

9

10 **QUESTION:**

11

- 12 a) Please provide the referenced source for each item in Table 1-1.
- 13
- 14 b) Please provide a reconciliation of total sales to total wholesale sales for 2012
15 actual (Cell A1) and GRA approved sales (Cell A2), with an explanation for all
16 variances.
- 17
- 18 c) Please confirm that actual generation (cell B2), less actual thermal generation (cell
19 B5) results in actual hydro generation. If not confirmed, please fully explain and
20 provide a reconciliation between total generation and thermal generation.
- 21
- 22 d) Please provide the actual incremental diesel costs incurred in 2012. In the
23 response, please provide the actual and approved total cost of diesel fuel and
24 maintenance on diesel generation.
- 25
- 26 e) Please fully explain how non-wholesale customers contribute to the DCF account.
27 Please provide a table similar to Table 1-1 for non-wholesale customers.
- 28
- 29 f) Please fully explain why “YEC thermal cost change (\$/kWh wholesales)” (cell B8)
30 should be applied to “Thermal Generation cost per GRA (\$/kW.h)” (cell B9) in
31 arriving at “YEC thermal cost change (\$/kWh wholesales)”, (cell B10).
- 32
- 33 g) Please provide a detailed analysis of the Thermal Generation cost per GRA (cell
34 B9).

1 h) Please provide the actual Thermal Generation cost, equivalent to cell B9, with
2 detailed supporting calculations.

3

4 i) Please fully explain the purpose of Cell D3 in the analysis.

5

6 **ANSWER:**

7

8 **(a)**

9

10 Please see CW-YEC-1-1 Attachment 1 for the requested information.

11

12 The attachment includes the following excerpts:

13

- 2012/13 GRA June 20, 2013 Compliance Filing:

14

- Table 1.1: Summary of Changes to the Revenue Requirement and Revenues at Existing Rates. This table shows total load and LTA thermal generation for 2012 and 2013.

18

- Schedule 9. This schedule shows approved sales, including wholesale sales for 2012 and 2013.

21

- 2017/18 GRA, Appendix 3.5. Table 1 to DCF Annual Filing for 2016 includes DCF calculations for 2012 to 2016.

24

- 2017/18 GRA, Table 2-2 shows actual loads, including losses for 2013-2016 years.

26

27 Please also see response to: YUB-YEC-1-1 (e) and (f), (h) and (m) for details of the
28 determination of the numbers; YUB-YEC-1-6(c), Tables 2.1 and 2.2 for sales and
29 generation approved forecasts and actual results for the years 2012 to 2016; and UCG-
30 YEC-1-8(a), Table 1 for additional information.

31

32 **(b)**

33

34 Please see Table 1 below for the requested information.

1

Table 1: 2012 GRA Approved and Actual Wholesales

	2012
Actual wholesales, MW.h	310,264
GRA approved wholesales, MW.h	296,000
Difference, MW.h	14,264
Impact of Fish Lake	992
Difference including impact of Fish Lake, MW.h	13,272

2

3 The GRA approved wholesales are as per the Compliance Filing. Actual wholesales are
 4 as actually recorded for firm sales. The net impact of Fish Lake hydro generation reflects
 5 the variance between LTA hydro generation assumed in the Compliance Filing and AEY's
 6 actual Fish Lake hydro generation.

7

8 Explanation for the variances in wholesales, other than the variance due to Fish Lake
 9 hydro generation, depend on explanations from AEY who, in its 2013-15 GRA, page 2-3
 10 states the following regarding the increase in sales:

11

12 "Strong economic and population growth in 2010 and 2011 led to the highest
 13 housing starts in 2011 since 2006, which, in turn, contributed to a high growth in
 14 Yukon Electrical's customer gains in both residential and commercial sectors. This,
 15 coupled with colder than "Normal" weather and a move to use electricity for space
 16 heating in more recent housing developments, resulted in strong electricity sales
 17 in 2011 and 2012. Sales to the residential sector grew 6.1% in 2012, while
 18 commercial sales grew 6.0%."

19 **(c)**

20

21 Not confirmed.

22

23 The difference between Line B2 and Line B5 provides long-term average (LTA) hydro
 24 generation of 407.688 GW.h (net of secondary sales and related losses), not actual hydro
 25 generation of 421.038 GW.h.

1 Line B2 in Table 1-1 provides YEC's actual generation net of secondary, LTA wind and FL
 2 hydro generation (MWh), while Line B5 provides YEC's LTA Thermal Generation (MWh)
 3 based on actual grid load. These numbers are calculated in Table 1 of the DCF Annual
 4 Filing for 2016 (which includes records for 2012 to 2016). A copy of the 2016 DCF Annual
 5 Filing is provided as Appendix 3.5 to YEC's 2017-2018 GRA [please see also CW-YEC-
 6 1-1 Attachment 1 in response to (a) above]. As reviewed in this DCF Annual Filing, actual
 7 hydro generation for 2012 (excluding secondary sales and related losses) was 421.038
 8 GW.h.

9

10 **(d)**

11

12 Please see Table 2 for the requested information.

13

14 **Table 2: 2012 GRA Approved and Actual LTA Thermal Generation and Fuel Cost**

	2012 LTA Thermal Generation, MW.h	2012 LTA Thermal Fuel Cost, \$000
YEC's actual LTA Thermal Generation	15,622	4,485
GRA LTA Thermal Generation	7,926	2,276
YEC Incremental thermal generation relative to GRA approved	7,696	2,209

15

16 Thermal fuel cost in Table 2 is based on LTA thermal generation, and shows the increase
 17 due to increased grid load. Cost for this incremental thermal generation includes only
 18 diesel generation at the GRA approved diesel price of 28.71 cents/kW.h. LTA thermal
 19 does not include maintenance thermal generation.

20

21 **(e)**

22

23 The "DCF account" in this question is assumed to be the DCF fund account. Assessment
 24 of DCF fund impacts is not addressed in Table 1-1, as reviewed below, and therefore the
 25 question cannot be addressed by providing "a table similar to Table 1-1 for non-wholesale
 26 customers".

1 Table 2 above shows the overall LTA thermal generation of 15.622 GW.h for 2012 based
 2 on actual grid load. Actual net diesel generation for 2012 was 2.683 GW.h (per DCF
 3 Annual Filing as provided in Appendix 3.5 of the 2017-18 GRA). YEC's payment into the
 4 DCF was based on the difference of 12.939 GW.h between LTA and actual diesel
 5 generation [15.623 - 2.683], costing YEC an additional \$3.715 million over the costs of
 6 diesel generation actually generated during 2012. This payment to the DCF fund reflected
 7 the growth in grid load relative to forecast (shown in Table 2 above from both wholesales
 8 and non-wholesales) and the impact of water flows well above LTA.

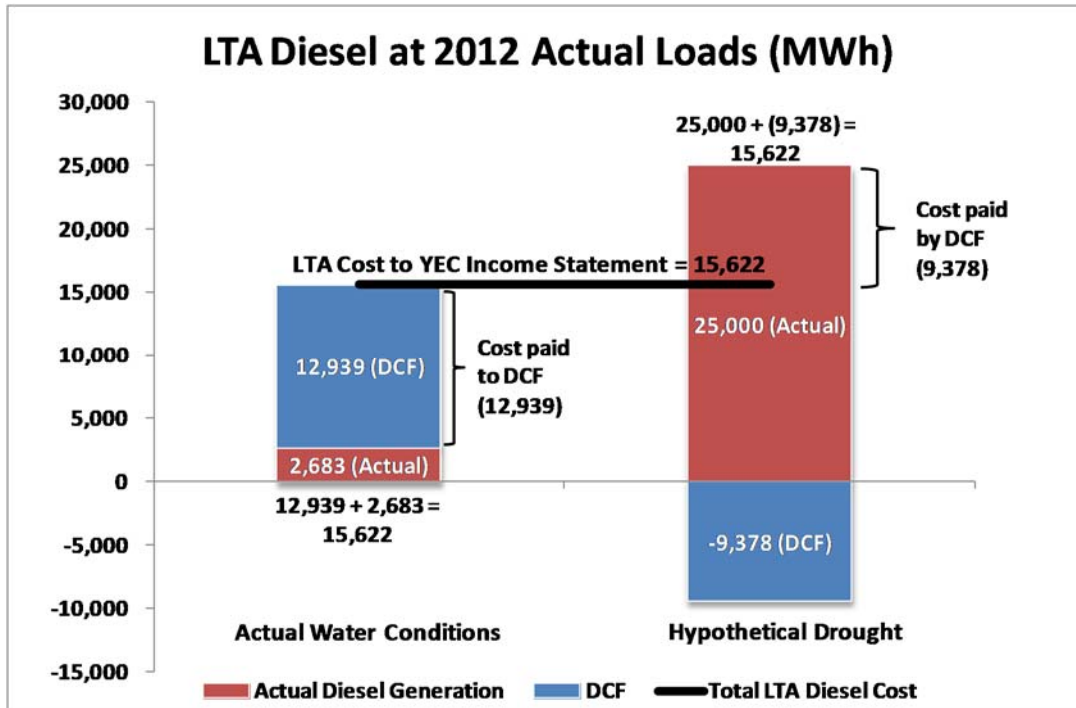
9

10 Figure 1 below demonstrates LTA diesel generation for 2012 based on 2012 actual total
 11 generation. It shows how the LTA generation and cost to YEC remains unchanged, even
 12 when water conditions are changed dramatically from the actual 2012 water conditions.
 13 Figure 1 also shows how actual diesel generation operated by YEC (net of capital projects
 14 and RFID diesel generation) can vary based on water conditions, while the LTA diesel
 15 generation remains unchanged due to payments into or out of the DCF after the year end.

16

17

Figure 1: LTA Diesel at 2012 Actual Loads (MW.h)



18

1 The Diesel Contingency Fund was established in the 1996/97 GRA Negotiated Settlement
2 to ensure that the Fund (and utility ratepayers), rather than YEC earnings, pays for or
3 benefits from changes to grid diesel generation due to fluctuations in grid hydro generation
4 due to water condition changes.

5
6 Customer rates are set based on long-term average hydro generation rather than short-
7 term forecast hydro generation. The DCF is maintained to address ongoing fluctuations in
8 thermal generation requirements (and related fluctuations in rates, up or down) that
9 ratepayers would otherwise be exposed to due to annual water availability. In effect, the
10 DCF operates to smooth rate impacts so that ratepayers are not subject to ongoing rate
11 instability from year to year depending on whether it is a flood or drought year.

12
13 All firm retail and industrial customers pay rates based on the approved forecast LTA
14 thermal generation requirements in the test years. At the end of the year, the difference
15 between the LTA thermal generation costs (determined based on actual grid load) and the
16 costs for thermal generation actually generated during 2012 is paid to (or refunded from)
17 the DCF.

18
19 Table 1-1 does not directly relate to the DCF and is focused only on the determination of
20 the ERA charge (or rebate) to AEY due to actual wholesale purchases exceeding or falling
21 short of Yukon Energy's most recent test year forecast wholesale purchase as approved
22 by the Board¹. The ERA charge calculated in Table 1-1 relates only to incremental
23 changes in YEC grid generation costs that occur when its wholesale customer's (AEY)
24 load changes.

25
26 Table 1-1 relates to a specific transaction between YEC and its wholesale customer (AEY)
27 that is required to ensure, per OIC direction, that Yukon Energy rates to its wholesale
28 customer are "...sufficient to enable Yukon Energy to recover its costs that are not
29 recovered from its other customers." There is no similar requirement to adjust charges to
30 non-wholesale customers based on these same factors. As such, a version of Table 1-1
31 cannot be provided for non-wholesale customers.

¹ Section 7 of Order in Council 1995/90 (the "OIC") directs the Board to fix rates of Yukon Energy for the wholesale power customer that are "...sufficient to enable Yukon Energy to recover its costs that are not recovered from its other customers." Rate Schedule 42 includes a provision for the ERA in order to address this OIC direction.

1 The demands from all firm customers of YEC are included both in the GRA forecast load
2 and actual grid load, and therefore drive the LTA thermal generation requirements for the
3 GRA forecast and the actual grid load. Table 1-1 of the ERA Application indicates that
4 80.2% of grid load growth over GRA forecasts in 2012 was due to wholesales growth (see
5 below) - the balance of the grid load growth over GRA forecasts was due to non-
6 wholesales growth over GRA forecasts.

7

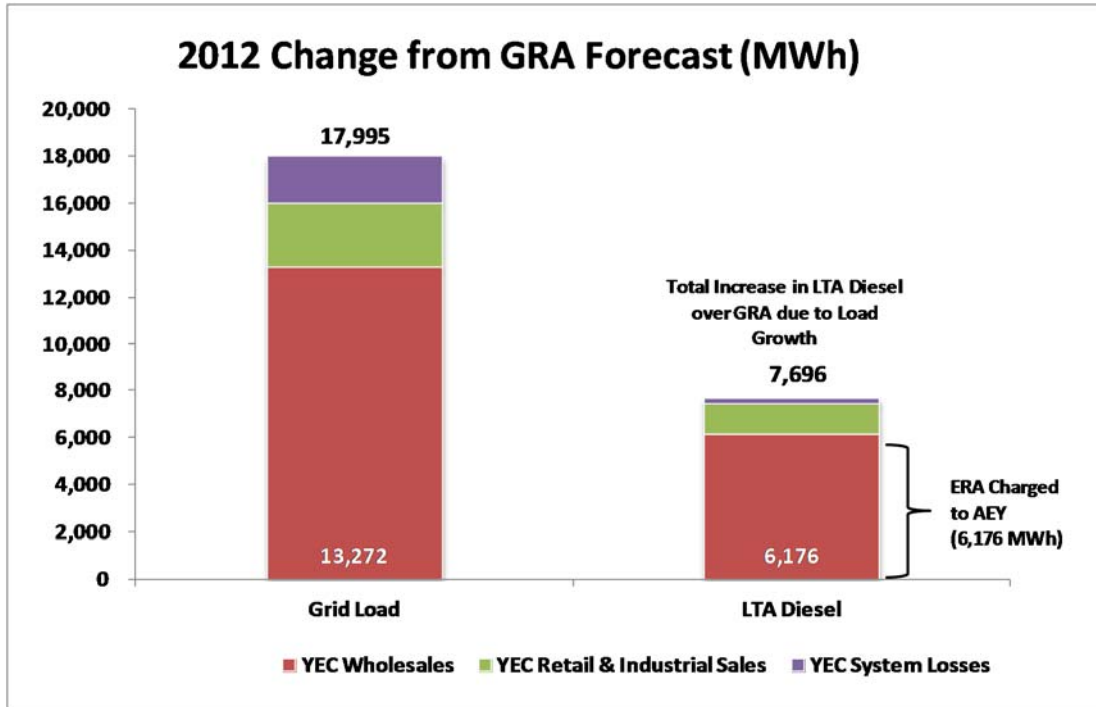
- 8 • Wholesale impacts on added grid load in 2012:
 - 9 ○ Wholesale load growth (sales) over GRA forecast: 13.272 GW.h
 - 10 ○ Added Generation from wholesales (8.8% losses): 14.440 GW.h
- 11 • Total Generation for 2012 over 2012 GRA forecast:
 - 12 ○ Total Generation growth: 17.995 GW.h
 - 13 ○ Share from Wholesale Growth: 80.2%

14

15 Figure 2 below shows the overall impacts in 2012 of changes from the GRA forecast in
16 total generation and in LTA thermal generation, and the ERA portion of the LTA thermal
17 generation change. The ERA charge of 6,176 MW.h shown in Figure 2 equals 42.77% of
18 the 14,440 MW.h of added generation due to the added wholesales, i.e., the incremental
19 LTA thermal generation for incremental generation as per Line B8 of Table 1-1 of the ERA
20 Application.

1

Figure 2: 2012 YEC Change (Increase) from GRA Forecast (MW.h)



2

3

4 (f)

5

6 The objective is to estimate added LTA thermal generation costs due to wholesales.

7

8 Line B8 calculates incremental LTA thermal generation out of total change in generation,
 9 actual to GRA approved. In 2012, the incremental total generation was 17,995 MW.h and
 10 incremental LTA thermal related to this generation growth was 7,696 MW.h. This results
 11 in 42.77% incremental LTA thermal [i.e., 42.77% of increased generation was supplied by
 12 LTA thermal].

13

14 The approved average fuel cost for 2012 was 28.71 cents/kW.h of diesel generation. YEC
 15 used 42.77% of 28.71 cents/kW.h per Line B9 (plus applicable losses of 8.8% to allow the
 16 cost to be applied to wholesales growth) to arrive at “YEC thermal cost change (\$/kW.h
 17 wholesales)” in Line B10 at 13.36 cents/kW.h of increased wholesales. [In effect, this
 18 analysis indicates that wholesales growth of 13.272 GW.h equals 14.440 GW.h of added
 19 grid generation after including 8.8% losses, and that the added diesel generation related
 20 to this wholesales growth is 42.77% of this added grid generation (6.176 GW.h) and costs

1 \$1.773 million (assuming 28.71 cents/kW.h for diesel generation). This cost is equal to the
2 13.36 cents/kW.h of added wholesales as per Line B10.]

3

4 In summary, the 13.36 cents/kW.h in Line B10 times 13,272 MW.h change in wholesale
5 results in the \$1.773 million cost impact shown in Line D1.

6

7 **(g)**

8

9 The average fuel cost in Line B9 of 28.71 cents per kW.h for 2012 was approved in Board
10 Orders 2013-01 and 2013-03 as per footnote 1 of Table 1-1. It equals the 2012 GRA
11 approved fuel cost at \$2.276 million divided by approved LTA thermal generation at 7.926
12 GW.h as provided in Table 2 above in response to (d) above.

13

14 **(h)**

15

16 YEC's actual thermal generation cost for 2012, as recorded for YEC's income statement,
17 was equal to the 28.71 cents per kW.h as shown in Line B9 of Table 1-1.

18 Variance between actual and GRA approved fuel prices is regulated through the Diesel
19 Fuel Price Variance Rider ("Rider F") mechanism. Therefore, for the purpose of DCF and
20 ERA the approved fuel prices are considered as the actual fuel prices.

21

22 For the Rider F related transactions please see reports filed by YEC and AEY before YUB
23 at <http://yukonutilitiesboard.yk.ca/reports/>.

24

25 **(i)**

26

27 The purpose of Line D3 in Table 1-1 is to set the ERA at zero in years when the revenue
28 change (due to wholesale change) exceeds the cost change to YEC.

29

30 The Line D3 in Table 1-1 shows "1" when the cost change due to wholesale (Line D1) is
31 higher than the revenue change (Line D2), and Line D3 shows "0" when the opposite is
32 true. The Line D3 is then used in calculation for Line D4, i.e., no ERA amount occurs when
33 Line D3 shows "0".

34

35 In summary, the purpose of the ERA for 2012 is to enable YEC to recover the net amount
36 of its added costs (due to wholesale loads exceeding GRA forecasts) after consideration

1 of all related added YEC revenues. In this context, there is no ERA amount for YEC to
2 recover when Line D3 equals "0" because YEC's revenue change exceeds its cost change
3 due to the wholesale change.

4
5 The relevance of these factors is highlighted in the ERA Application at pages 1-12 and 1-
6 13, including Table 1-3. The ERA is focused on YEC net cost impacts, and does not
7 address wholesale variations from forecast impacts on YEC revenues as such, i.e., YEC
8 revenue impacts [separate from offsets to YEC cost impacts] from changes to wholesales
9 from GRA forecast are not addressed through the ERA or any other mechanism.

Table 1.1-1: YEC 2012/13 GRA Compliance Filing: Diesel Generation and Fuel Expense Forecast

	2012/13 GRA		Adjustments (YUB 2013-01)		Compliance Filing	
	2012	2013	2012	2013	2012	2013
Load Forecast - 2012/13 GRA Application, GW.h	415.9	430.4				
<i>Minto Load forecast update (paragraph 39)</i>			-9.5	-17.0		
<i>Fish Lake impact to wholesales (paragraph 35)</i>				3.9		
<i>Provision for YECL losses on WHCT load (paragraph 49) ¹</i>				0.3		
<i>Line Losses for the adjustments</i>			-0.8	-1.1		
<i>Total Load adjustments</i>			-10.4	-14.0		
Load Forecast - Compliance Filing, GW.h					405.6	416.4
	2012/13 GRA: 66% of long-term average for 2012 and 59% for 2013		Adjustments (YUB 2013-01)		Compliance Filing at 100% long-term average	
	2012	2013	2012	2013	2012	2013
Diesel Generation Forecast - 2012/13 GRA Application, GW.h ²	7.5	10.7				
<i>Use Long-term average (paragraph 60)</i>			4.0	7.5		
<i>Updated Load Forecast (paragraph 68)</i>			-3.6	-7.2		
<i>Total Load adjustments</i>			0.4	0.3		
Diesel Generation Forecast - Compliance Filing, GW.h					7.9	11.0
Diesel Fuel Expense - 2012/13 GRA Application, \$000 ²	2,163	3,073				
<i>Use Long-term average (paragraph 60)</i>			1,134	2,137		
<i>Updated Load Forecast (paragraph 68)</i>			-1,021	-2,050		
<i>Total Load adjustments</i>			113	87		
Diesel Fuel Expense - Compliance Filing, \$000					2,276	3,160

Notes:

1. Provision for YECL losses on WHCT load calculated at 6.2% (YECL's 2009 GRA).
2. Diesel generation and fuel expense forecasts in 2012/13 GRA were based on 66% of long-term average for 2012 and 59% for 2013. At 100% long term average the diesel generation would be 11.5 GW.h for 2012 and 18.2 GW.h for 2013, and fuel expense \$3.3 million and \$5.2 million in 2012 and 2013 respectively (please see 2012/13 GRA Application, Tab 2, footnote 26).

Yukon Energy Corporation
Summary of Customers, Energy Sales and Revenues
(\$000s)

Schedule 9
June 20, 2013 Refiling

Line No.	Description	2009 Approved	Actual 2009	Actual 2010	Prelim. Actual 2011	Proposed 2012	Proposed 2013
1	Residential						
2	Customers	1,432	1,457	1,472	1,515	1,526	1,536
3	Sales in MWh	11,183	11,676	11,386	12,710	12,325	12,408
4	MWh sales per customer	8	8	8	8	8	8
5	Revenue (\$000s)	1,335	1,386	1,359	1,694	1,803	1,815
6	Cents per KWh	11.94	11.87	11.94	13.33	14.63	14.63
7	General Service						
8	Customers	457	442	455	464	460	467
9	Sales in MWh	19,543	19,672	22,719	21,305	21,693	22,620
10	MWh sales per customer	43	45	50	46	47	48
11	Revenue (\$000s)	2,637	2,696	2,942	3,218	3,582	3,735
12	Cents per KWh	13.49	13.70	12.95	15.10	16.51	16.51
13	Industrial						
14	Sales in MWh	29,023	29,355	30,255	43,259	42,783	40,592
15	Revenue (\$000s)	3,203	3,190	3,311	4,599	4,955	4,787
16	Cents per KWh	11	11	11	11	12	11.79
17	Street lights						
18	Sales in MWh	278	496	283	283	279	279
19	Revenue (\$000s)	71	60	74	82	88	88
20	Cents per KWh	25.63	12.07	26.26	29.02	31.55	31.55
21	Space lights						
22	Sales in MWh	15	26	14	14	15	15
23	Revenue (\$000s)	3	3	3	3	4	4
24	Cents per KWh	21.54	12.03	21.73	23.96	26.76	26.76
25	Total Company - Firm Retail and Industrial						
26	Customers	1,889	1,899	1,927	1,979	1,986	2,003
27	Sales in MWh	60,042	61,225	64,658	77,571	77,094	75,913
28	Revenue (\$000s)	7,249	7,335	7,689	9,596	10,432	10,429
29	Cents per KWh	12.07	11.98	11.89	12.37	13.53	13.74
30	Wholesale sales						
31	Sales in MWh	267,747	267,229	276,345	290,541	296,000	307,147
32	Revenue (\$000s)	18,314	18,279	18,902	21,940	24,562	25,487
33	Cents per KWh	6.84	6.84	6.84	7.55	8.30	8.30
34	Total Company - Firm						
35	Sales in MWh	327,789	328,455	341,003	368,112	373,094	383,061
36	Revenue (\$000s)	25,563	25,613	26,591	31,535	34,994	35,916
37	Cents per KWh	7.80	7.80	7.80	8.57	9.38	9.38
38	Secondary						
39	Sales in MWh	7,584	17,384	10,489	552	0	0
40	Revenue (\$000s)	470	1,066	644	46	0	0
41	Cents per KWh	6.20	6.13	6.14	8.30		
42	Total Company						
43	Sales in MWh	335,373	345,839	351,492	368,665	373,094	383,061
44	Revenue (\$000s)	26,033	26,679	27,234	31,581	34,994	35,916
45	Cents per KWh	7.76	7.71	7.75	8.57	9.38	9.38
46	Rider J	4,518	4,493	4,944	2,466		
47	Post-GRA Reconcil Req'd	355	355				
48	GRA Increase Req'd					3,672	6,163
49	Total Sales of Power	30,906	31,527	32,178	34,047	38,666	42,079
50	Other Revenues	125	181	198	247	184	184
51	Total Revenues	31,031	31,708	32,376	34,294	38,850	42,263

ATTACHMENT 1: DCF CALCULATIONS AND BALANCE UPDATES – 2016

Table 1: DCF Calculations for 2012-2016

Line No		2012 Actuals	2013 Actuals	2014 Actuals	2015 Actuals	2016 Preliminary Actuals	Notes
L1	Fuel Cost per KW.h, Diesel	28.71	28.71	28.71	28.71	28.71 cents/KW.h	2012/13 GRA Compliance Filing Average Fuel cost
	Fuel Cost per KW.h, LNG				18.83	18.17 cents/KW.h	
Calculation of Diesel or LNG Cost to Charge (Refund) DCF							
	<i>Assumptions</i>						
L2	YEC Grid load	424,541	419,173	396,498	410,316	412,776 MW.h	Actual net of secondary sales (with losses)
L3	Fish Lake	3,388	3,687	10,247	9,180	8,033 MW.h	Fish Lake generation
L4=L2+L3	Total Grid load	427,929	422,860	406,745	419,495	420,809 MW.h	
	<i>Assumed Actual Generation Sources</i>						
L5=L3	YECL Fish Lake	3,388	3,687	10,247	9,180	8,033 MW.h	Fish Lake generation
L6	YEC Hydro	421,039	416,987	394,595	404,797	406,136 MW.h	Residual as total generation less diesel and wind
L7	YEC Thermal	3,057	1,910	1,566	4,868	6,131 MW.h	Diesel and LNG
	Diesel	3,057	1,910	1,566	3,574	2,879	
	LNG				1,295	3,251	
L7a	YEC Diesel/LNG charged to capital	373	872	951	2,047	1,043	Includes charged to RFID
	Diesel	373	872	951	1,345	586	
	LNG				702	457	
L7b=L7-L7a	YEC Net Diesel/LNG	2,683	1,037	615	2,822	5,087	
	Diesel	2,683	1,037	615	2,229	2,293	
	LNG	-	-	-	593	2,794	
L8	YEC Wind	445	277	337	650	509 MW.h	Wind generation
L9=L5+L6+L7+L8	Total Grid load	427,929	422,860	406,745	419,495	420,809 MW.h	
	<i>Expected Generation Sources</i>						
L10	YECL Fish Lake (expected)	4,380	4,380	8,730	8,730	8,730 MW.h	Unit #2 at 4.380 GW.h - no Unit #1 generation in 2012 and 2013.
L11	YEC Wind (expected)	239	238	238	238	238 MW.h	
L12=L9-L10-L11	YEC Grid load net of expected Fish Lake and Wind	423,310	418,242	397,777	410,527	411,841 MW.h	
L13a	YEC Grid Load amount per Column A of Approved DCF Term Sheet Table	420,000	415,000	395,000	410,000	410,000 GW.h	Table 1.1, Approved DCF Term Sheet (Order 2015-06)
L13b	Expected Base Thermal Generation at YEC Grid Load amount in row L13a	14,100	11,800	4,400	9,800	9,800 MW.h	Derived from Table 1.1, Approved DCF Term Sheet (Order 2015-06)
L14a	Incremental Expected Thermal Generation as percent of load above L13a (%)	46%	46%	32%	40%	40%	Table 1.1, Approved DCF Term Sheet (Order 2015-06)
L14b=(L12-L13a)xL14a	Expected Incremental Thermal Generation above amount in L13b	1,522	1,491	889	211	736 MW.h	Derived from Table 1.1, Approved DCF Term Sheet (Order 2015-06)
L15=L13b+L14b	Total Expected YEC Thermal Generation	15,622	13,291	5,289	10,011	10,536 MW.h	
L16=L15	Expected YEC Thermal Generation in Rates	15,622	13,291	5,289	10,011	10,536 MW.h	100% of long-term average
	Diesel	15,622	13,291	5,289	8,509	- MW.h	
	LNG				1,502	10,536 MW.h	At 15% LNG displacement of expected diesel in 2015; 100% in 2016.
L17=L7b	YEC Thermal Generation	2,683	1,037	615	2,822	5,087 MW.h	Net of capital diesel (L7b)
	Diesel	2,683	1,037	615	2,229	2,293 MW.h	
	LNG				593	2,794 MW.h	
L18=L17-L16	YEC Thermal Generation to be Included in DCF	-	12,939 -	12,254 -	4,674 -	7,189 -	5,449 MW.h
	Diesel	-	12,939 -	12,254 -	4,674 -	6,281 -	- MW.h
	LNG				-	909 -	5,449 MW.h
L19=L1xL18	Incremental YEC Thermal Generation Cost to Charge (Refund) DCF (\$000s)	(\$3,715)	(\$3,518)	(\$1,342)	(\$1,974)	(\$990)	

**YUKON ENERGY CORPORATION
 2017 – 2018 GENERAL RATE APPLICATION**

JUNE 2017

1
2

**Table 2.2:
 Summary of Energy Balance, Losses, and Peak**

Line No.	Description	2013 Approved ¹	2013 Actual	2014 Actual	2015 Actual	2016 Actual	Existing Forecast 2017 ²	Proposed Forecast 2017 ³	Existing Forecast 2018 ²	Proposed Forecast 2018 ³
Sales and Losses										
1	Total Energy Sales	383,061	388,363	374,248	380,152	385,865	397,859	397,859	398,582	398,582
2	Losses - MWh	33,326	35,127	28,076	37,883	32,186	35,012	35,012	35,075	35,075
3	Losses - %	8.7%	9.0%	7.5%	10.0%	8.3%	8.8%	8.8%	8.8%	8.8%
4	Total Generation	416,387	423,490	402,323	418,035	418,051	432,871	432,871	433,658	433,658
5	Secondary Sales Related Generation	0	4,318	5,821	7,731	5,238	12,473	12,473	12,473	12,473
6	Firm Load Generation	416,387	419,172	396,502	410,304	412,812	420,398	420,398	421,185	421,185
Actual Generation - MWh										
Hydro Generation										
7	Whitehorse	222,299	221,312	219,243	234,063	232,820	228,084	228,084	228,587	228,587
8	Aishihik	124,475	137,991	112,095	97,330	100,111	121,755	121,755	122,024	122,024
9	Mayo	58,369	62,000	69,082	81,123	78,480	80,280	80,280	80,457	80,457
10	Total Hydro	405,143	421,303	400,421	412,517	411,411	430,119	430,119	431,068	431,068
11	Wind Turbine	238	277	337	650	509	580	580	580	580
Diesel Generation⁴										
12	Whitehorse	5,503	840	978	1,672	1,727	577	577	527	527
13	Faro	1,651	900	338	405	193	135	135	123	123
14	Dawson	3,852	135	223	1,477	938	300	300	274	274
15	Mayo	0	34	26	20	22	10	10	9	9
16	Total Diesel	11,006	1,910	1,566	3,574	2,879	1,022	1,022	934	934
17	LNG Generation ⁴	0	0	0	1,295	3,251	1,150	1,150	1,076	1,076
	Total Thermal⁴	11,006	1,910	1,566	4,868	6,131	2,172	2,172	2,010	2,010
Source - %										
18	Hydro Generation	97.3%	99.5%	99.5%	98.7%	98.4%	99.4%	99.4%	99.4%	99.4%
19	LNG Generation	0.0%	0.0%	0.0%	0.3%	0.8%	0.3%	0.3%	0.2%	0.2%
20	Diesel Generation	2.6%	0.5%	0.4%	0.9%	0.7%	0.2%	0.2%	0.2%	0.2%
21	Wind Generation	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%
LTA Generation - MWh										
	LTA Hydro Generation	405,143	405,643	390,976	400,056	402,038	406,076	405,672	406,567	406,126
	LTA Wind Generation	238	238	238	238	238	238	580	238	580
	LTA Thermal Generation	11,006	13,291	5,288	10,011	10,536	14,084	14,146	14,380	14,480
	Total LTA Generation	416,387	419,172	396,502	410,305	412,812	420,398	420,398	421,185	421,185
Peak - MW⁵										
20	Integrated System	80.0	82.7	76.5	82.1	88.1	91.8	91.8	92.9	92.9

Notes:

- 2013 Approved diesel forecast assumed hydro generation at 100% of long-term average (LTA), based on assumption that WCT would be in operation.
- "Existing Forecasts" for 2017 and 2018 LTA Generation assume 2012/13 GRA YECESIM model LTA assessments for hydro generation and 2013 approved LTA wind generation; LTA thermal assumed to be supplied 100% with LNG generation.
- "Proposed Forecasts" for 2017 and 2018 LTA Generation assume updated YECESIM model LTA assessments for hydro generation and updated LTA wind generation; LTA thermal assumed to include peaking generation but not maintenance, and to be supplied 90% with LNG and 10% with diesel generation. The thermal generation forecast fuel costs (Table 3.2) also include forecast generation for maintenance (446 MW.h in 2017 [133 MW.h LNG, 313 MW.h diesel] and 329 MW.h in 2018 [100 MW.h LNG and 229 MW.h diesel]).
- Actual thermal generation reflects actual generation required for maintenance, capital, RFID and all other generation, e.g., peaking. Forecast Actual Generation includes peaking, maintenance and capital (596 MW.h diesel each test year) requirements reflecting short-term hydro generation forecasts.
- Peak load is one-hour maximum load on the grid (forecasts assume weather normalized temperature). Forecasts for 2017 and 2018 are calculated using load factors calculated in Resource Plan Load Forecast Report 2016 [hourly non-industrial peak forecast]. The load factors for non-industrial sales are expected to be lower than in the past due to higher peaks resulting from added space heat. The Load Forecast Report 2016 notes that "peak demand forecast shows a steady increase at the beginning of the period (to 2030) driven by the increase in electrical space heating in both residential and commercial buildings."

3

1 **TOPIC:** ERA Determination for 2013-2016

2

3 **REFERENCE:** Table 1-2: ERA Determination for 2013-16

4

5 **PREAMBLE:** In Table 1-2, YEC provides the calculation of the ERA change for 2013-
6 2016. CW requires information to understand the calculations.

7

8 **QUESTION:**

9

- 10 a) Please provide the referenced source for each item in Table 1-2 for each year.
- 11
- 12 b) Please provide a reconciliation of total sales to total wholesale sales for 2012
13 actual (row A1) and GRA approved sales (row A2), with an explanation for all
14 variances for each year.
- 15
- 16 c) Please confirm that actual generation (row B2), less actual thermal generation (row
17 B5) results in actual hydro generation for each year. If not confirmed, please fully
18 explain and provide a reconciliation between total generation and thermal
19 generation for each year.
- 20
- 21 d) Please provide the actual incremental diesel costs incurred in 2012. In the
22 response, please provide the actual and approved total cost of diesel fuel and
23 maintenance on diesel generation.
- 24
- 25 e) Please fully explain how non-wholesale customers contribute to the DCF account.
26 Please provide a table similar to Table 1-1 for non-wholesale customers.
- 27
- 28 f) Please fully explain why “YEC thermal cost change (\$/kWh wholesales)” (row B8)
29 should be applied to “Thermal Generation cost per GRA (\$/kW.h)” (row B9) in
30 arriving at “YEC thermal cost change (\$/kWh wholesales)”, (row B10) for each
31 year.
- 32
- 33 g) Please provide a detailed analysis of the Thermal Generation cost per GRA (row
34 B9) for each year.

- 1 h) Please provide the actual Thermal Generation cost, equivalent to row B9, with
2 detailed supporting calculations for each year.
3
4 i) Please fully explain the purpose of row D3 in the analysis.
5

6 **ANSWER:**

7
8 **(a)**

9
10 Please see response to CW-YEC-1-1-Attachment 1 (which includes referenced sources
11 for Table 1-1 and 1-2).
12

13 **(b)**

14
15 Please note the question requests information for 2012, but references Table 2-1 which
16 includes 2013-2016 actuals. Table 1 below provides information for 2013-2016
17 [information for 2012 is provided in response to CW-YEC-1-1].
18

19 **Table 1: 2013-2016 GRA Approved and Actual Wholesales**

	2013	2014	2015	2016
Actual wholesales, MW.h	307,927	295,284	297,961	301,207
GRA approved wholesales, MW.h	307,147	307,147	307,147	307,147
Difference, MW.h	780	-11,863	-9,186	-5,940

Impact of Fish Lake	693	-1,517	-450	697
Difference including impact of Fish Lake, MW.h	87	-10,346	-8,737	-6,637

20
21 The GRA approved wholesales are as per the Compliance Filing. Actual wholesales are
22 as actually recorded for firm sales. The net impact of Fish Lake hydro generation reflects
23 the variance between LTA hydro generation assumed in the Compliance Filing and AEY's
24 actual Fish Lake hydro generation.
25

26 AEY in its 2016-17 GRA, page 2-3 states the following regarding the decrease in sales
27 after 2013:

28 "After experiencing strong growth from 2004-2012, the pace of economic activity
29 in the Yukon has slowed down significantly. The Yukon economy has declined due

1 to depressed mineral and commodity prices as evidenced by the decreases in real
 2 GDP of -1.2% in 2014, and an estimated -6.0% in 2015. Slower population growth
 3 has also contributed to minimal customer gains in both residential and commercial
 4 sectors for ATCO Electric Yukon. Additionally, ATCO Electric Yukon's Demand
 5 Side Management (DSM) program, as well as Yukon Government energy
 6 initiatives, such as the Commercial Energy Incentive Program and Micro-
 7 generation were introduced in the Yukon over the last few years and have all
 8 contributed to lower electricity sales in 2013, 2014, and 2015.”

9

10 **(c)**

11

12 Please see response to CW-YEC-1-1 (c).

13

14 **(d)**

15

16 Please note the question requests information for 2012, but references Table 2-1 which
 17 includes 2013-2016 actuals. Table 2 below provides information for 2013-2016.

18

19 **Table 2: 2013-2016 GRA Approved and Actual LTA Thermal Generation and Fuel**
 20 **Cost**

	2013		2014		2015		2016	
	LTA Thermal Generation, MW.h	LTA Thermal Fuel Cost, \$000	LTA Thermal Generation, MW.h	LTA Thermal Fuel Cost, \$000	LTA Thermal Generation, MW.h	LTA Thermal Fuel Cost, \$000	LTA Thermal Generation, MW.h	LTA Thermal Fuel Cost, \$000
YEC's actual LTA Thermal Generation	13,291	3,816	5,289	1,518	10,011	2,726	10,536	2,156
2013 GRA LTA Thermal Generation	11,006	3,160	11,006	3,160	11,006	3,160	11,006	3,160
YEC Incremental thermal generation relative to GRA approved	2,285	656	-5,717	-1,642	-995	-434	-470	-1,004

21

22

23 Note: The actual thermal generation for 2015 and 2016 years include LNG cost based on the LNG fuel price
 24 as provided on DCF 2016 Annual Filing. A copy of this filing is provided in Appendix 3.5 of 2017/18 GRA
 25 [please see CW-YEC-1-1 Attachment 1].

26

27 LTA thermal does not include maintenance thermal generation.

1 **(e)**

2

3 Please see response to CW-YEC-1-1 (e).

4

5 **(f)**

6

7 Please see response to CW-YEC-1-1 (f).

8

9 **(g)**

10

11 The average fuel cost in Line B9 of 28.71 cents per kW.h for 2013 and 2014 was approved
12 as the diesel generation price in Board Orders 2013-01 and 2013-03 as per footnote 1 of
13 Table 1-1. See response to CW-YEC-1-1(f).

14

15 The average fuel cost in Line B9 for 2015 and 2016 include the approved diesel fuel price
16 from the 2012-13 GRA, LNG cost per kW.h of LNG generation based on the LNG fuel
17 price as provided on DCF 2016 Annual Filing, and the annual total estimated diesel and
18 LNG share of the actual LTA expected thermal generation. A copy of this filing is provided
19 in Appendix 3.5 of 2017/18 GRA [please see CW-YEC-1-1 Attachment 1].

20

21 **(h)**

22

23 Please see response to CW-YEC-1-1 (h).

24

25 **(i)**

26

27 Please see response to CW-YEC-1-1 (i).

**Utilities Consumers' Group
(UCG)**

1 **TOPIC:**

2

3 **REFERENCE: December 6, 2017 Application, pages 1-1 and 1-2**

4

5 *The Court's findings at paragraphs 63 to 65, as referenced in Appendix A to Board Order*
6 *2017-08, included the following:*

7

8 • *The Board accepted for the 2012-13 GRA that the expected diesel costs included*
9 *in approved rates are based on long-term average ("LTA") hydro generation*
10 *forecasts provided by the YECSIM model.*

11

12 • The Board approved the revised DCF in Board Order 2015-01 as a rate
13 stabilization mechanism, and a customer trust fund in which Yukon Energy has
14 no beneficial interest. In approving the revised DCF "...it accepted that Yukon
15 Energy's annual diesel generation costs are its generation costs plus its DCF
16 payments, not just its actual diesel costs."

17

18 • "...the ERA is a rate stabilization mechanism intended to ensure that Yukon
19 Electrical receives a full pass-through of all incremental costs or savings of diesel
20 generation attributable to higher or lower than forecast wholesale purchases."

21

22 **PREAMBLE:**

23

24 **QUESTION:**

25

26 a) Please confirm that, as established in 1993, the ERA is used to pass through
27 YEC's incremental costs or savings of diesel generation that result from changes
28 in the volume of YECL wholesale purchases compared to the forecast approved
29 by the YUB to establish the then current single energy-only wholesale rate and,
30 in effect, ensures that YECL's retail Hydro zone loads would be served by YECL
31 under the same risk profile as all other YECL loads in Yukon.

32

33 b) Does YEC believe that the ERA has any impact on the affordability of electricity
34 service costs paid by Yukon ratepayers?

1 c) Please outline what steps YEC has taken to advise Yukon ratepayers of the
2 potential impact of its application to the Court of Appeal of Yukon.

3

4 **ANSWER:**

5

6 **(a)**

7

8 Confirmed.

9

10 **(b)**

11

12 Board decisions since the 1993/94 GRA have recognized that, when diesel is on the
13 margin for YEC, an ERA mechanism is required to set out how YEC's annual diesel cost
14 variances due solely to variances from YUB approved GRA wholesale forecasts are to
15 be reflected in rates charged to YECL. Historically, this has been a flow through cost to
16 YECL that has not directly impacted ratepayer costs or bills.

17

18 As a recent new adjustment related to such ERA charges or rebates, Board Order 2009-
19 2 and Order 2010-13 accepted YECL's proposal for a Purchase Power Flow Through
20 deferral account to flow through to ratepayers any adjustment to YECL's rates
21 associated with Yukon Energy's applied for but not yet approved updated Energy
22 Reconciliation Adjustment (ERA), and directed YECL to propose for Board approval a
23 rider mechanism to collect these charges from ratepayers at a future date. This change
24 would impact customer bills and affordability going forward.

25

26 However, it is noted that customers to date have not been impacted by ERA charges
27 and it is understood that a rider mechanism to collect these charges would first need to
28 be reviewed and approved by the YUB. Once such a mechanism is approved, customer
29 bills would be impacted by these charges.

30

31 **(c)**

32

33 Yukon Energy's application to the Court of Appeal is a matter of public record. Yukon
34 Energy has noted in its 2017/18 GRA that the ERA was the subject of an appeal to the
35 Court (the Appeal) from the Board's Order 2015-06, and that at such time as the Court's

- 1 decision is provided, Yukon Energy would review the ERA and provide the Board with a
- 2 filing as required on this matter.

1 **TOPIC:**

2

3 **REFERENCE: December 6, 2017 Application**

4

5 **PREAMBLE:**

6

7 **QUESTION:**

8

9 a) Please confirm that on December 31, 2015 in its Order 2015-07, the Yukon
10 Utilities Board dismissed YEC's Review and Variance application regarding
11 Board Order 2015-06.

12

13 b) When YEC applied to the Yukon Court of Appeal to appeal the August 18, 2015
14 Order 2015-06 of the YUB setting a rate for its wholesale electricity sales to
15 YECL, did YEC request that Rate Schedule 42 set per Board Order 2015-06 be
16 made interim pending the results of the appeal?

17

18 c) Please confirm the date when YEC implemented the rates approved by the YUB
19 per Board Order 2015-06.

20

21 **ANSWER:**

22

23 **(a)**

24

25 Confirmed.

26

27 **(b) and (c)**

28

29 The ERA only pertains to a portion of Rate Schedule 42. All other elements of Rate
30 Schedule 42 remain in effect as approved by the Board.

31

32 Yukon Energy's application to the Yukon Court of Appeal asserted an error of law with
33 regard to the Board's direction in Order 2015-06 on the implementation of the ERA in
34 Rate Schedule 42. In Yukon Energy's view, further changes to the rate schedule were
35 not advisable until the Yukon Court of Appeal had provided its views on the matter. In

1 the interim, the existing rate schedule [approved by the Board in Order 2011-06 following
2 the 2009 Phase II Rate Proceeding] remains in place.
3
4 Yukon Energy cannot charge AEY an ERA charge pursuant to Rate Schedule 42 until
5 approved by the Board. Board Order 2015-06 did not approve any specific rates, but
6 provided directions regarding the ERA which in effect removed any basis for ERA
7 charges in 2012 through 2016.

1 **TOPIC:**

2

3 **REFERENCE: December 6, 2017 Application, pages 1-2 and 1-3**

4

5 **PREAMBLE:**

6

7 **QUESTION:**

8

9 a) Please confirm that the Diesel Contingency Fund (DCF) was established to
10 ensure that Yukon ratepayers pay more stable and consistent rates for electricity
11 than would otherwise be the case when more diesel generation is required in low
12 water years.

13

14 b) Please confirm that the DCF was inactive between 1999 and 2011.

15

16 c) Please explain where the funding for the DCF came from leading up to payment
17 by YEC to the DCF of \$439,000 (now \$501,000) in 2012.

18

19 d) Please confirm that YEC paid an additional \$501,000 into the DCF for electricity
20 purchased by YECL even though it did not incur that \$501,000 in “actual” diesel
21 generation costs.

22

23 e) Please provide a table showing the calculation of YEC’s utility income and rate of
24 return for 2012 before and after the \$501,000 recovery applicable to 2012.

25

26 **ANSWER:**

27

28 **(a)**

29

30 The Diesel Contingency Fund was established in the 1996/97 GRA Negotiated
31 Settlement to ensure that the Fund (and utility ratepayers), rather than YEC earnings,
32 pays for or benefits from changes to grid diesel generation due to fluctuations in grid
33 hydro generation due to factors such as water condition changes that are beyond utility
34 control. The overall objective of the DCF is to enable Yukon ratepayers to pay more
35 stable and consistent rates for electricity.

1 **(b)**

2
3 It is confirmed that the fund had been generally inactive between 1999 and 2011 [after
4 the Faro mine closed permanently]. Historically the fund has been inactive when hydro
5 generation surplus conditions exist on the WAF grid and diesel was not on the margin
6 under LTA hydro conditions.

7
8 **(c)**

9
10 The question appears to confuse amounts paid into the DCF with ERA charges for 2012.

11
12 The \$439,000 (now \$501,000) amount noted for 2012 is an ERA charge by YEC to AEY
13 and not a DCF payment. The basis for the ERA charge is reviewed in Table 1-1 in the
14 ERA Part 1 Application. This charge is based on incremental thermal generation due to
15 growth in AEY wholesales over the 2012 wholesale GRA forecast. It does not relate to
16 changes in diesel generation related to water variability and consequently is not related
17 to payments into or out of the DCF.

18
19 Please see Appendix 3.5 of the 2017/18 GRA which provides the 2016 Annual DCF
20 Report. Attachment 1 of this document provides the DCF Calculations and balance
21 updates from 2012 to 2016 and notes as follows regarding payments into the DCF in
22 2012:

- | | | |
|----|---|------------------|
| 23 | • 2012 expected YEC thermal generation in rates | 15,622 MWh |
| 24 | • 2012 YEC thermal generation | <u>2,682 MWh</u> |
| 25 | • 2012 YEC thermal generation to be included in DCF | 12,939 MWh |

26
27 The 2012 incremental YEC Thermal Generation costs charge (refund) to YEC regarding
28 the DCF was \$3.715 million. This was based on the 12,939 MWh [the difference
29 between the forecast LTA diesel generation included in rates and the actual diesel
30 generation that occurred in 2012] multiplied by the GRA diesel fuel cost of 28.71 c/kWh.

31
32 **(d)**

33
34 Not confirmed.

1 See response to part (c) above. The \$501,000 is an ERA charge by YEC to AEY related
2 to wholesale load growth above GRA forecasts and is not a DCF payment. The DCF
3 relates only to changes in diesel generation related to water variability and does not
4 address changes related to load.

5
6 Further, the \$439,000 (now \$501,000) relates to actual diesel generation expense
7 incurred by YEC in 2012, net of reductions for estimated added revenues received by
8 YEC from AEY (the change from \$439,000 to \$501,000 relates solely to refinements of
9 the estimated added revenues [see response to YUB-YEC-1-3(a and b)]). This is
10 reviewed in detail para 36 to 38 of the Court of Appeal decision as follows:

11
12 [36] In its application, Yukon Energy emphasized that, for rate-setting purposes,
13 its diesel costs are determined based on long-term average water conditions to
14 stabilize rates and smooth cost fluctuations due to variable water availability,
15 regardless of actual diesel generation in a given year. It also noted the effects of
16 two significant events which coincided in 2012.

17
18 [37] First, water levels were higher than predicted. This meant Yukon Energy
19 produced 12,939 MW.h (megawatt hours) less electricity than forecast through
20 diesel generation, which saved \$3.715 million. Under DCF rules, it paid this
21 amount into the DCF. Second, Yukon Electrical's wholesale demand was 14,264
22 MW.h higher than forecast. Under the approved diesel generation forecast based
23 on long-term average water conditions, Yukon Energy would have expected to
24 meet about half the excess wholesale load through diesel generation. However,
25 due to the favourable water conditions, it was able to generate almost all Yukon
26 Electrical's excess wholesale load through hydro. Nevertheless, under DCF
27 rules, it was obliged to pay into the DCF the expected increase of \$1.773 million
28 in diesel generation costs attributable to the excess wholesale demand.
29 Additional revenues from the above-forecast purchases were \$1.334 million,
30 leaving a shortfall of \$439,000.

31
32 [38] According to Yukon Energy, its additional net DCF payment attributable to
33 above forecast wholesale demand should be recovered from Yukon Electrical
34 through the ERA as a diesel-related cost. In support of its position, it noted that
35 the DCF payment was an obligatory cost Yukon Energy incurred to meet Yukon

1 Electrical's wholesale demand which, under DCF rules, was based on long-term
2 average water conditions and not on actual conditions.

3

4 **(e)**

5

6 Inclusion of \$501,000 of ERA income in YEC's 2012 income statement would increase
7 the return on equity for that year by 0.57%, from 6.75% to 7.33%.

1 **TOPIC:**

2

3 **REFERENCE:** **December 6, 2017 Application, page 1-5 and 1-6**

4

5 *“The increase of \$62,000 from the \$439,000 amount estimated in*
6 *YEC’s April 7, 2015 ERA filing, and referenced in the Yukon Court of*
7 *Appeal Order, is entirely due to refinements in the revenue impact*
8 *assessments. No changes exist in the thermal cost impact*
9 *assessments. The revenue impact assessment for 2012 addresses*
10 *additional YEC revenues that are reasonably attributable to the*
11 *wholesales being higher than the forecast. The \$62,000 increase in*
12 *the revenue impact assessment for 2012 relates to (1) the estimate*
13 *for Rider J revenue amounts per kW.h of wholesales in 2012, and (2)*
14 *the revenues assessed for wholesales changes due to Fish Lake*
15 *hydro generation variances from LTA.”*

16

17 **PREAMBLE:**

18

19 **QUESTION:**

20

21 a) Please explain why YEC should be allowed in 2018 to update Rider J revenues
22 related to added wholesale sales in 2012 and why this wouldn’t be considered
23 retroactive rate setting.

24

25 b) Please explain why YEC’s April 2015 estimate of 2012 revenues affected by Fish
26 Lake hydro generation included estimated rather than actual Energy Charge
27 revenue changes on incremental wholesales resulting from the Fish Lake hydro
28 generation reduction from the approved LTA.

29

30 **ANSWER:**

31

32 **(a)**

33

34 Yukon Energy is not seeking to update Rider J rates charged to customers related to
35 added wholesales in 2012; as such this is not retroactive ratemaking. The ERA is an
36 unsettled matter from the 2012/13 GRA and the 2014 DCF/ERA Proceeding that has

1 been before the Courts and was undetermined until September 2017. Yukon Energy is
2 seeking finalization of charges to AEY for 2012 ERA amounts following the Court's
3 decision.

4

5 Please see response to YUB-YEC-1-1(m) and YUB-YEC-1-3(a and b).

6

7 **(b)**

8

9 YEC's April 2015 estimate, as well as YEC's estimate in the current ERA Application, of
10 2012 revenues included the same estimate of actual Energy Charge revenue changes
11 on incremental wholesales resulting from the Fish Lake hydro generation reduction from
12 the approved LTA. The change in estimated revenues related to this item as provided in
13 the ERA Application relates solely to removal of the earlier estimated Rider J revenues.
14 Please see response to YUB-YEC-1-1(m), YUB-YEC-1-3(a), and YUB-YEC-1-4(a).

1 **TOPIC:**

2

3 **REFERENCE: December 6, 2017 Application, page 1-7**

4

5 **PREAMBLE:**

6

7 **QUESTION:**

8

9 a) If YEC's final diesel generation costs for 2012 were determined by the DCF Term
10 Sheet table as approved by the Board, and did not involve any new assessments
11 using the YECSIM model, why is YEC making adjustments to revenue impact
12 assessments?

13

14 b) Please explain how actual diesel generation affected the payment to the DCF for
15 2012 but it did not affect the total diesel generation cost incurred by YEC.

16

17 **ANSWER:**

18

19 **(a)**

20

21 YEC's adjustments to revenue impact assessments for the ERA have no relationship to
22 the DCF Term Sheet Table or to YECSIM.

23

24 As noted in response to AEY-YEC-1-3(d) and (f) the revenue impact adjustments made
25 in relation to the calculation of the 2012 ERA charge to AEY do not relate to, or affect,
26 the determination of DCF Charges for 2012. The basis for the revenue impact
27 assessments for determining the 2012 ERA charge are reviewed in AEY-YEC-1-3(d)
28 and (f) and YUB-YEC-1-3(a and b) and reflect use of 2012 actual rider charges over the
29 six months of 2012 when the Rider J was in place for the calculation [instead of using an
30 estimate based on the full revenue shortfall of 6.85% for all of 2012] as well as removal
31 of any Rider J revenue estimates related to changes in Fish Lake hydro generation.

32

33 As illustrated in Figure 2-1 of the Part 2 ERA calculation the ERA charges flowed
34 through to AEY are determined after YEC's final thermal generation costs for the fiscal
35 year are determined [and consequently do not impact the determination of those costs].

1 **(b)**

2

3 The DCF contingency fund mechanism ensures that YEC's final thermal generation
4 costs in each fiscal year to supply the grid load are based on the LTA thermal generation
5 (as per the DCF Term Sheet Table) for the actual grid load. Accordingly, YEC's actual
6 and final thermal generation cost is not affected by water conditions or actual diesel
7 generation.

8

9 In order to secure the above requirements, the DCF contingency fund mechanism
10 addresses any variance between YEC LTA thermal generation for the actual grid load
11 and actual YEC thermal generation. The DCF mechanism accordingly resulted in YEC's
12 being required to make a payment to the DCF for 2012 (due to LTA thermal generation
13 exceeding actual thermal generation).

1 **TOPIC:**

2

3 **REFERENCE: December 6, 2017 Application, page 1-8**

4

5 *“Accordingly, YEC final diesel generation costs for 2012 were not*
6 *affected by actual short-term system operation decisions (where*
7 *differences can occur from planning model assumptions), or by any*
8 *decisions on opportunities to enhance hydro storage for wintertime,*
9 *or by any other specific potential cause for actual hydro operation to*
10 *vary from YECSIM assumptions for the 2012 water conditions or for*
11 *any other water year in the multiple years of record included in the*
12 *2012/13 GRA YECSIM assessments.”*

13

14 **PREAMBLE:**

15

16 **QUESTION:**

17

18 a) Please provide details of all operation decisions that varied from YECSIM
19 assumptions for 2012 and the impact that each of these decisions had on
20 thermal general costs actually incurred by YEC.

21

22 **ANSWER:**

23

24 **(a)**

25

26 YECSIM provides LTA estimates of hydro and thermal generation for specific grid loads,
27 based on a weekly time step and all of the other factors included in this model. YEC’s
28 final actual thermal generation costs for 2012 were determined based on the LTA
29 thermal generation estimate derived from the approved DCF Term Sheet Table, and
30 these thermal generation costs were therefore not affected by any operation decisions
31 made in 2012.

32

33 YEC is not able to provide any analysis of operation decisions that varied from YECSIM
34 assumptions for 2012. Actual operation throughout 2012 was affected by a wide range of
35 factors, and the YECSIM model in contrast provides LTA estimates that consistently
36 reflect the full range of recorded water conditions (versus only the conditions in 2012).

- 1 The key operation decisions affecting actual thermal generation in 2012 reflect use of
- 2 the available water, and YEC's operations are designed to facilitate efficient use of the
- 3 available water on an ongoing basis.
- 4
- 5 Please also see response to YUB-YEC-1-5(a-b), YUB-YEC-1-6(a-b), and AEY-YEC-1-1(b-c).

1 **TOPIC:**

2

3 **REFERENCE: December 6, 2017 Application, page 1-8**

4

5 *“The DCF is a trust fund for the benefit of ratepayers. Any efficiencies*
6 *or inefficiencies related to actual YEC operation of its hydro*
7 *generation facilities had no impact on Yukon Energy’s final thermal*
8 *generation cost or net income for 2012, even if such factors affect the*
9 *amounts for YEC’s transfers into or out of the DCF. Yukon Energy’s*
10 *final generation cost and net income were based solely on the LTA*
11 *expected thermal generation determinations made according to the*
12 *approved DCF Term Sheet.”*

13

14 **PREAMBLE:**

15

16 **QUESTION:**

17

18 a) Please confirm YEC’s understanding that a trust fund is a special type of legal
19 entity established by a grantor with a named beneficiary and trustee.

20

21 b) Please provide details of when the DCF was determined to be a trust fund to
22 which YEC was named the trustee.

23

24 c) Please confirm that YEC does not own any of money contained within the DCF
25 that it manages on behalf of Yukon ratepayers.

26

27 **ANSWER:**

28

29 **(a) and (b)**

30

31 The DCF Fund is a ratepayer trust fund initially established pursuant to Board Order
32 1996-7; the updated fund was approved by the Board in Order 2015-01. The fund is
33 established by Board Order and its requirements and how it operates are as approved
34 by the Board.

1 The following is noted regarding the purpose and function of the DCF in the DCF Term
2 Sheet [Appendix 3.4 of the 2017/18 GRA]:

3

4 The Diesel Contingency Fund (“DCF”) operates to smooth customer rate
5 changes from thermal (diesel, LNG and other thermal) generation cost impacts
6 caused by fluctuation of hydro generation due to water conditions or changes in
7 wind conditions.¹

8

9 Yukon Energy Corporation (YEC) manages the DCF as a ratepayer “trust fund”.
10 The Fund is only to be used for variations from long-term average (LTA) water
11 and wind availability.

12

13 In Order 2015-01, the Board directed as follows: "Any application to utilize the fund in
14 some other fashion will require the closing of the fund, the refunding of any balances to
15 customers, and the direction for YEC to use short-term forecasts for its hydro generation
16 in future GRAs." ²

¹ Appendix A to Board Order 2015-01, section 2.1.1.4, page 11.

² Appendix A to Board Order 2015-01, section 2.1.1.4, page 14.

1 **TOPIC:**

2

3 **REFERENCE:** December 6, 2017 Application, page 1-11

4

5 *“In each subsequent year from 2014 to 2016, wholesales to AEY*
6 *(after Fish Lake adjustments) were less than the last GRA approved*
7 *forecast for 2013. In addition, in each of these years Yukon Energy’s*
8 *reductions in revenues related to these lower wholesales (including*
9 *any revenue changes related to Fish Lake hydro generation variances*
10 *from approved long-term average) exceeded its related reductions in*
11 *thermal generation costs. Accordingly, there was no net cost saving*
12 *that YEC needs to rebate to AEY in any of these years, i.e., the ERA*
13 *is zero for each year.”*

14

15 **PREAMBLE:**

16

17 **QUESTION:**

18

19 a) For 2012 to 2016, please provide all data, the sources of this data, assumptions
20 and the calculations related to actual vs. forecast wholesale sale levels, actual
21 Fish Lake hydro generation vs. long-term average, actual vs. forecast thermal
22 generation costs by fuel source, and the ERA calculations.

23

24 b) Please provide details of the end-user bill impacts (\$ and %) associated with the
25 ERA adjustments proposed by YEC in this application, when these bill impacts
26 are forecast to occur, and how long Yukon ratepayers will see this impact on their
27 bills.

28

29 **ANSWER:**

30

31 **(a)**

32

33 Please see Table 1 for some of the requested information. Please also see Tables 2.1
34 and 2.2 in YUB-YEC-1-6(c) for other requested information on sales and generation
35 (GRA forecast and actual) for 2012 to 2016. The ERA calculations are provided in the
36 ERA Application tables.

37

1
2

Table 1: Sources for the Wholesale and LTA Thermal

	2012	2013	2014	2015	2016	
Actual wholesales, MW.h	310,264	307,927	295,284	297,961	301,207	For 2012 actual please see AEY 2013-15 GRA Compliance Filing Revised Schedule 3.1; for 2013-2015 actuals please see AEY 2016-17 GRA Compliance Filing Schedule 3.1.
GRA approved wholesales, MW.h	296,000	307,147	307,147	307,147	307,147	Please see Schedule 9 of YEC 2012/13 GRA June 2013 Compliance Filing as provided in response to CW-YEC-1-1 Attachment 1.
Change in wholesales before Fish Lake impact	14,264	780	-11,863	-9,186	-5,940	
Fish Lake expected LTA, MW.h	4,380	4,380	8,730	8,730	8,730	8,730 MW.h was approved by YUB Order 2009-02 and 2014-06. for 2012 and 2013 numbers please see YUB-YEC-1-1 b) and d). For 2012 actual please see AEY 2013-15 GRA Compliance Filing Revised Schedule 3.1; for 2013-2015 actuals please see AEY 2016-17 GRA Compliance Filing Schedule 3.1.
Fish Lake actual, MW.h	3,388	3,687	10,247	9,180	8,033	For 2012 actual please see AEY 2013-15 GRA Compliance Filing Revised Schedule 3.2; for 2013-2015 actuals please see AEY 2016-17 GRA Compliance Filing Schedule 3.2. 2016 was provided by AEY.
Fish Lake generation adjustment (expected LTA less actual), MW.h	992	693	-1,517	-450	697	
Change in wholesales after Fish Lake impact, MW.h	13,272	87	-10,346	-8,737	-6,637	
YEC's LTA Thermal Generation for actual load (MWh)	15,622	13,291	5,289	10,011	10,536	Please see Table 1 of Attachment 1 to Appendix 3.5 of YEC 2017/18 GRA as provided in response to CW-YEC-1-1 Attachment 1. [Diesel fuel cost \$0.2871/kW.h; LNG fuel cost \$0.1878 for 2015 and \$0.1817 for 2016]
Actual Thermal Generation [diesel], net of capital and RFID (MWh)	2,683	1,037	615	2,229	2,293	
Actual Thermal Generation [LNG], net of capital and RFID (MWh)	0	0	0	593	2,794	
YEC's LTA Thermal Generation for actual load (\$millions)	4.5	3.8	1.5	2.7	2.1	
GRA LTA Thermal Generation [diesel] (MW.h)	7,926	11,006	11,006	11,006	11,006	Please see Table 1.1-1: YEC 2012/13 GRA Compliance Filing: Diesel Generation and Fuel Expense Forecast of YEC 2012/13 GRA June 2013 Compliance Filing as provided in response to CW-YEC-1-1 Attachment 1.
GRA LTA Thermal Generation [diesel] (\$millions)	\$2.3	\$3.2	\$3.2	\$3.2	\$3.2	

3
4

(b)

The information requested cannot be provided by YEC.

8

Pursuant to the ERA Part 1 Application an ERA charge of \$501,000 would be collected by YEC from AEY pursuant to Rate Schedule 42. It is understood that AEY would hold this amount in its approved Purchase Power Flow Through Deferral Account (PPFTDA). At this time a collection/ dispersal mechanism for the PPFTDA has not been approved by the YUB; and AEY would need to apply for approval of such mechanism prior to collection/ dispersal of any ERA charges.

14

1 **TOPIC:**

2

3 **REFERENCE: December 6, 2017 Application, page 1-13 and Appendix 1.1, Rate**
4 **Schedule 42**

5

6 *“Energy Reconciliation Adjustment*

7 *YECL’s wholesale primary bill will be adjusted at the end of each*

8 *calendar year by an amount equal to any increase or reduction in*

9 *thermal generation costs, net of related changes in wholesale*

10 *revenues, incurred by Yukon Energy as a direct result of actual*

11 *wholesale purchases exceeding or falling short of Yukon Energy’s*

12 *most recent test year forecast wholesale purchases as approved by*

13 *the Yukon Utilities Board.”*

14

15 **PREAMBLE:**

16

17 **QUESTION:**

18

19 a) Please provide details of the YUB’s legislative jurisdiction to would allow it to
20 issue an Order in 2018 approving an amended Rate Schedule 42 wholesale rate
21 effective January 1, 2012.

22

23 b) Given that YECL no longer exists, please explain why the proposed Rate
24 Schedule 42 is still tagged as available only to YEC and how the ERA
25 incorporated into the proposed Rate Schedule 42 could be implemented.

26

27 c) If AEY’s wholesale primary bill will be adjusted at the end of each calendar year,
28 why wouldn’t the adjustment be based on actual wholesale purchases exceeding
29 or falling short of Yukon Energy’s most recent YUB-approved calendar year
30 forecast wholesale purchases instead of the referenced test year forecast?

1 **ANSWER:**

2

3 **(a)**

4

5 The Yukon Utilities Board is required to address this matter pursuant to a direction from
6 the Yukon Court of Appeal regarding Order 2015-06.

7

8 **(b)**

9

10 The 2016/17 GRA notes that the Yukon Electrical Company Limited carries on business
11 as ATCO Electric Yukon ("AEY"), which suggests that YECL still exists [see page 1-2 of
12 the AEY 2016/17 GRA]. All current rate schedules were approved prior to YECL
13 changing its trade name to AEY and therefore reference Yukon Electrical Company
14 Limited. It is understood that YECL is in reference to AEY.

15

16 Further, Rate Schedule 42 is available to YECL [not YEC as stated in the question].

17

18 **(c)**

19

20 The YUB only approves test year forecasts. The "most recent test year forecast" is by
21 definition the same as "the most recent YUB-approved calendar year forecast wholesale
22 purchases".

**Yukon Utilities Board
(YUB)**

1 **TOPIC:**

2

3 **REFERENCE:** YEC ERA Part 1 Application, Part 1, page 1-3, Table 1-1.
4 YEC 2017-18 GRA, Appendix 3.5, Table 1, page 3.5-4.

5

6 **ISSUE/SUB-ISSUE:** Actual wholesales

7

8 **PREAMBLE:**

9

10 Table 1-1 shows 2012 Actual wholesales of 310,264 MW.h

11

12 **QUESTION:**

13

14 a) Please state the source of 2012 actual wholesales and show all calculations as
15 to how the amount is determined. Does line A1 in Table 1-1 include any line
16 losses? Please explain.

17

18 b) YEC ERA Part 1 Application, page 1-3, Table 1-1, shows a Fish Lake generation
19 adjustment of 992 MW.h and refers readers to Table 1 of the DCF Annual Filing
20 for 2016 found in Appendix 3.5 of YEC's 2017-18 GRA at page 3.5-4. Please
21 provide how the 992 MW.h were determined for this adjustment and explain the
22 meaning of "expected LTA" and "actual" generation.

23

24 c) From Table 1 of Appendix 3.5 to YEC's 2017-18 GRA, which is referred to in the
25 YEC ERA Part 1 Application, please explain what is meant by "Assumed Actual
26 Generation Sources". How were the assumed actual generation sources
27 amounts determined?

28

29 d) Line 10 of Table 1 in Appendix 3.5 of YEC's 2017-18 GRA is titled "YECL Fish
30 Lake (expected)". Please explain what this term means and how the 2012
31 quantity was determined for that line.

32

33 e) Section B of Table 1-1 from the YEC ERA Application shows line losses of
34 8.80%. The note refers to Table 2.2. Does this refer to YEC's 2012-13 GRA? If
35 so, what filing is it referring to — the initial application or the compliance filing? If

1 it does not refer to the compliance filing, are these forecast losses? Please
2 explain.

3

4 f) If the losses referred to in part (e) above are forecast, please explain the
5 applicability of using forecast line losses in conjunction with actual wholesales as
6 referenced in Line A1 of Table 1-1 of the YEC ERA Part 1 Application.

7

8 g) In response to YUB-YEC-1-6(b) of the of the VGC Group Power Purchase
9 Agreement, YEC stated the following with respect to a question on line losses:
10 "The difference in line loss for the Mayo to McQuesten Substation transmission
11 segment between 138kV and 69kV operation with the same 138 kV capable
12 transmission conductor required for the planned load is marginal at around 0.4%.
13 There is not a significant difference in losses in part because the distance is
14 short, at around 35km. (Footnote removed)." With respect to line losses
15 determined with regards to the 2012 ERA calculation please clarify the following:

16 i) What year and what date did the Carmacks-Stewart Transmission
17 Project (CSTP) Phase 1 come into service?

18 ii) Was the 138 kV CSTP Phase 1 line initially energized at 69 kV or at
19 138 kV?

20 iii) If the CSTP Phase 1 line was energized at 69 kV, at what date was it
21 fully energized at 138 kV?

22 iv) If the CSTP Phase 1 line was originally energized at 69 kV, please
23 provide a table showing the incremental line losses from operating that
24 line at 69kV instead of 138 kV for each month that the line operated at
25 69 kV.

26 v) If the CSTP Phase 1 line was operational in 2012 and if that line was
27 energized at 69 kV during 2012, please explain and demonstrate how
28 YEC factored in the operation of the CSTP Phase 1 line in determining
29 line losses of 8.80% with respect to the calculation of the 2012 ERA
30 amounts.

31

32 h) Line B2 of Table 1-1 of the YEC ERA Part 1 Application refers to Table 1 of
33 Attachment 1 to Appendix 3.5 of YEC's 2017-18 GRA. Does YEC's actual
34 generation net of secondary, LTA wind & FL refer to line 12 of Table 1 of
35 Attachment 1 which is titled "YEC Grid load net of expected Fish Lake and
36 Wind"? If so, please explain the difference between "actual" and "expected". With

1 respect to line B2, please explain what “actual generation” refers to (i.e. metered
2 generation?) and how the “secondary LTA wind & FL (MW.h) was determined.
3

4 i) In the context of the YEC ERA Part 1 Application, please explain what YEC
5 means when it uses the word “actual”. Does YEC ascribe similar meaning to the
6 words “expected” and “assumed”?
7

8 j) Line B3 of Table 1-1 refers to YEC’s compliance filing to Board Order 2013-01.
9 Please provide the schedule number, a copy of the schedule, and the line
10 number that shows the 405,314 depicted in line B3. If not shown on a schedule,
11 please explain and show the derivation of the number provided in line B3. Please
12 explain why YEC in line B3 did not net out the expected FL (MW.h) in addition to
13 the netting out of expected wind (MW.h). Please explain the difference between
14 “LTA” and “expected”.
15

16 k) To clarify, what is included in line B5 of Table 1-1 entitled “YEC’s actual LTA
17 Thermal Generation (MWh)”? Is this amount influenced by any operational
18 decisions during that year? Please explain. What other events or operational
19 considerations are not included in the derivation of that amount? Please provide
20 the derivation of this amount.
21

22 l) Line B6 of Table 1-1 entitled “GRA LTA Thermal Generation (MWh)” references
23 note 1 which refers to Board Order 2013-03. Please provide the document and
24 the derivation of the 7,926 MW.h.
25

26 m) In line C2 of Table 1-1 entitled “Average YEC rider applicable to AEY retails
27 (\$/kWh wholesales)”, why is an average used? Can YEC identify in what month,
28 day or hour that the AEY wholesale purchases took place? Can YEC identify by
29 month, day or hour the GRA forecast of wholesale purchases by AEY? If yes, file
30 the information for 2012. If no, please explain.
31

1 **ANSWER:**

2
3 **(a)**

4
5 The number shown in line A1, 310,264 MW.h, is the actual wholesale sales for 2012.
6 This reconciles to the actual firm power purchases reported by AEY in its 2013-15 GRA
7 Compliance Filing, Revised Schedule 3.1, Line 2. The actual wholesale sales of 310,264
8 MW.h does not include any YEC line losses.

9
10 **(b) and (d)**

11
12 The Fish Lake generation adjustment of 992 MW.h provided at Line A3 of Table 1-1 is
13 the difference between:

- 14
15 1. LTA Fish Lake generation at 4,380 MW.h (as included for 2012 in YEC's
16 2012/13 Compliance Filing); and
17
18 2. Actual Fish Lake hydro generation in 2012 of 3,388 MW.h as reported by AEY.

19
20 "Expected LTA" Fish Lake generation as referenced at Line A3 of Table 1-1, and
21 "expected" Fish Lake generation as referenced at Line 10 of Table 1 in Appendix 3.5 of
22 YEC's 2017-18 GRA, mean long-term average ("LTA") Fish Lake generation as
23 approved by the Board. For 2012, the LTA for Fish Lake generation included only Unit
24 #2 as assumed for 2012 in YEC's 2012/13 Compliance Filing. Unit #1 was not available
25 in 2012 due to the failure of Unit #1 in March 2010,¹ and this unit was not expected to be
26 back in service until December 2013 [as noted in YEC's 2012/13 GRA Compliance Filing
27 on June 23, 2013].²

28
29 "Actual" as referenced at Line A3 of Table 1-1 means AEY's actual generation from Fish
30 Lake hydro in 2012.

31

¹ AEY 2013-15 GRA, page 3-1.

² Footnote 2 on page 1-3 of the YEC's 2012/13 GRA Compliance Filing noted that following release of YUB Order 2013-1, YEC has received an update from AEY on March 23, 2013 noting that the Fish Lake Unit #1 was expected to be back in service on December 2, 2013 with anticipated generation in 2013 of 500,000 kWh.

1 **(c)**

2
3 “Assumed Actual Generation Sources” in Table 1 of Appendix 3.5 of YEC’s 2017-18
4 GRA is the actual hydro, thermal and wind generation in each year to supply the actual
5 firm load.

- 6 • Actual YEC wind and thermal generation are as recorded for each year.
- 7 • Actual YEC hydro generation is actual total hydro generation as recorded less
8 actual secondary sales and estimated losses on secondary sales (estimated
9 based on actual average YEC losses).
- 10 • Actual “YECL Fish Lake” is actual Fish Lake hydro generation as recorded by
11 AEY for each year.

12
13 The term “assumed” has no special meaning and could be deleted. It was included to
14 reflect the estimated losses used to determine YEC’s actual hydro generation (i.e., the
15 estimated losses on secondary sales, and the actual secondary sales, are removed from
16 actual total hydro generation).

17
18 In summary, Table 1 of Appendix 3.5 to YEC’s 2017-18 GRA sets out the total YEC firm
19 generation for 2012 at 424.541 GW.h, based on total YEC generation less secondary
20 sales (with estimated losses).³ Net YEC actual firm hydro generation of 421.039 GW.h
21 for 2012 equals the total YEC firm generation less actual diesel generation of 3.057
22 GW.h and less actual wind generation of 0.445 GW.h.

23
24 **(e) and (f)**

25
26 The line losses in Section B, Line B1 of Table 1-1 are the actual YEC line losses for 2012
27 of 8.80%.

28
29 The reference in Table 1-1 to “Table 2.2 GRA” is to the 2017-18 GRA, which includes
30 actual line losses for 2013-2016 years but does not include any reference to 2012, i.e.,
31 this reference is not applicable to 2012 and Table 1-1.

³ For 2012 the total actual generation by YEC including secondary sales was 426.709 GW.h. The secondary sales approximated 1.993 GW.h plus estimated losses at 8.8% to total secondary related generation at 2.168 GW.h. YEC generation net of secondary sales and related losses was therefore estimated at 424.541 GW.h [426.709 – 2.168].

1 **(g)**

2
3 The question asks if the CSTP Phase 1 had been initially energized at 69 kV, and then
4 has various subsequent questions if 69 kV energization had actually occurred.

5
6 In summary, no segment of the CSTP line was ever energized at 69 kV. Further, all of
7 the CSTP was energized at 138 kV during all of 2012, and therefore the 2012 losses
8 relevant to the 2012 ERA were not affected by any changes in energization of the CSTP.

9
10 The following are noted to provide relevant information in this regard:

11
12 **(i)**

13
14 CSTP Stage I was placed into service in November 2008.

15
16 **(ii)**

17
18 CSTP Stage I was energized at 138 kV from Carmacks to the Minto Landing
19 substation. The Minto Spur connecting the Minto Landing Substation to the Minto
20 Mine (~ 27 km) was energized at 25 kV as it was designed. The line from Minto
21 Landing to Pelly Crossing (approximately 25 km) was constructed at 138 kV
22 standard but energized at 25 kV.

23
24 As part of CSTP Stage 2 between Pelly Crossing and Stewart Crossing, a step
25 down transformer and related substation equipment were installed at Pelly
26 Crossing so that the entire line could be energized at 138 kV. Stage 2 was
27 brought into service in June 2011, with the entire CSTP energized at 138 kV.

28
29 **(iii) to (v)**

30
31 As above, no segment of the CSTP line was ever energized at 69 kV. Line loss
32 information from late 2008 until June 2011 on the portion of the line energized at
33 25 kV between Minto Landing Substation and Pelly Crossing is not available.
34 Line losses are determined based on corporate calculation of total sales volumes
35 versus generation and include the impact of station service loads and line and

1 equipment losses. In most cases, YEC does not have the infrastructure in place
2 to determine line losses on individual components below this corporate level.

3

4 **(h)**

5

6 Yes, the relationship is confirmed between the two different information sources set out
7 in the second sentence of the question. This relationship is reviewed below to address
8 issues raised in the question.

9

10 The question references information from Table 1-1 of the ERA Application, and
11 information from Table 1 of Appendix 3.5 of the 2017-18 GRA. In reviewing this
12 information (see below), it is relevant to note that the approved GRA forecasts for 2012
13 and 2013 included LTA diesel generation based on LTA estimates for YEC hydro
14 generation, YEC wind generation, and YECL (AEY) Fish Lake hydro generation. Further,
15 the final DCF determination for 2012 (as provided in Table 1 of Appendix 3.5 of YEC's
16 2017-18 GRA) uses YEC's actual generation for 2012 and the approved DCF Term
17 Sheet Table for 2012.⁴

18

- 19 • The actual YEC generation in Line B-2 of Table 1-1 of the ERA Part 1 Application
20 refers to Line 12 of Table 1 of Attachment 1 to Appendix 3.5 of YEC's 2017-18
21 GRA which is titled "YEC Grid load net of expected Fish Lake and Wind", and
22 equals 423,310 MW.h for 2012 in both tables. "Expected Fish Lake and Wind" in
23 Line 12 of Table 1 of Attachment 1 to Appendix 3.5 of YEC's 2017-18 GRA
24 means LTA Fish Lake hydro generation (as adopted for the approved GRA
25 forecast) and estimated LTA wind (as approved for the GRA forecast⁵). Actual
26 generation of 423,310 MW.h for 2012 is determined after deducting LTA Fish
27 Lake hydro generation and LTA wind generation.

⁴ The DCF Term Sheet Table for 2012 was approved in Section 2.4 of Appendix A to Board Order 2015-06, referencing Attachment 1 of YEC's Compliance Filing provided April 7, 2015. Unlike earlier GRA filings, this DCF Term Sheet did not include a separate Table for the 2013 GRA test year as by 2015 it was known that (contrary to the approved 2013 GRA forecasts) the Whitehorse Copper Tailings industrial customer had not connected to the grid.

⁵ Estimated LTA wind generation (or "expected" wind) reflects YEC estimates based on wind resource information and information on the available long-term average wind turbine resource for the test years. Unlike hydro generation, there is no "long-term average" data set used to calculate this estimation.

1 • “Actual generation” in Line B2 in Table 1-1 includes metered total generation for
2 2012, less metered secondary sales and estimated losses on these secondary
3 sales (estimated at 8.80% of these sales, based on actual average YEC system
4 losses). These deductions remove impacts on actual generation from actual
5 secondary sales, and as a result provide actual firm grid generation.
6

7 • “LTA wind and FL” in Line B2 in Table 1-1 means estimated LTA wind (as
8 approved for the GRA forecast⁶) and LTA Fish Lake hydro generation (as
9 adopted for the approved GRA forecast). These deductions ensure that “actual
10 generation” used to determine LTA hydro and LTA thermal generation removes
11 impacts related to actual wind or actual Fish Lake hydro generation varying from
12 the long-term averages used for the GRA.
13

14 For the purpose of DCF calculations after each year end per the approved DCF Term
15 Sheet for the 2012-13 GRA, YEC uses actual firm grid load net of “expected” Fish Lake
16 and wind generation to remove impacts from changes in YEC’s hydro generation related
17 to those generation source variances from long-term average levels. For 2012 the
18 impact from the change in actual versus “expected” Fish Lake and wind generation was
19 negative 786 MW.h, reflecting increased YEC hydro generation due to lower than
20 expected Fish Lake generation at 992 MW.h offset partially by higher than expected
21 wind generation at 206 MW.h:
22

23 • The “expected” long-term average Fish Lake generation for 2012 from the
24 approved GRA was 4,380 MW.h [please see the response to part b) and d)
25 above for determination of 4,380 MW.h] as shown in Line 10 of Table 1 of
26 Attachment 1 to Appendix 3.5 of YEC’s 2017-18 GRA. The actual reported Fish
27 Lake generation for 2012 was 3,388 MW.h⁷ as shown in Line 3 of that table
28 resulting the difference of 992 MW.h.
29

30 • The “expected” long-term average wind generation as approved for 2012 as part
31 of 2012/13 GRA was 239 MW.h as shown in Line 11 of Table 1 of Attachment 1
32 to Appendix 3.5 of YEC’s 2017-18 GRA. Actual wind generation for 2012 was

⁶ Ibid.

⁷ AEY 2013-15 GRA Compliance Filing, Revised Schedule 3.2, line 7.

1 445 MW.h as shown in Line 8 of that table resulting in the difference of 206
2 MW.h.

3

4 For 2012 the total actual generation by YEC including secondary sales was 426.709
5 GW.h. The secondary sales approximated 1.993 GW.h plus losses at 8.8% to total
6 secondary related generation at 2.168 GW.h. YEC generation net of secondary sales
7 and related losses was therefore estimated at 424.541 GW.h [426.709 – 2.168].
8 Excluding the difference in Fish Lake generation (actual less estimated LTA) of 992
9 MW.h, and removing expected long-term average wind generation of 239 MW.h, leaves
10 423.310 GW.h as per line B2 of Table 1-1.

11

12 **(i)**

13

14 In the context of the YEC ERA Part 1 Application, the word “actual” refers to actual
15 generation numbers or costs for a fiscal year, while the word “expected” generally refers
16 to long-term average (LTA) generation or costs determined as per an approved GRA or
17 per the approved DCF Term Sheet.

18

19 The term “actual LTA Thermal Generation” (Line B5 of Table 1-1) refers to the DCF
20 determination of LTA thermal generation (after year end) based on actual YEC
21 generation. In contrast, the term “GRA LTA Thermal Generation” (Line B6 of Table 1-1)
22 refers to the approved GRA forecast of LTA thermal generation.

23

24 As reviewed in response to (c) above, the word “assumed” used with “actual” has no
25 special meaning and could be deleted. It was included to reflect the estimated losses
26 used to determine YEC’s actual hydro generation (i.e., the estimated losses on
27 secondary sales, and the actual secondary sales, are removed from actual total hydro
28 generation).

29

30 **(j)**

31

32 The approved GRA forecast generation firm load at Line B3 of Table 1-1 for 2012 at
33 405,314 MW.h is net of both “expected” Fish Lake hydro generation and “expected” wind
34 generation as approved for the GRA. Details to explain this are reviewed below. “LTA”
35 and “expected” in this context have the same meaning, and are explained in more detail
36 above in response to YUB-YEC-1-1(h) and YUB-YEC-1-1(i).

1 The GRA forecast firm generation load for 2012 of 405,314 MW.h is calculated as
2 follows:

- 3 • Forecast YEC firm generation at 405,553 MW.h [YEC 2012/13 GRA Compliance
4 Filing, Appendix 1.1, Table 1.1-1: Diesel Generation and Fuel Expense Forecast
5 shows YEC generation at rounded 405.6 GW.h], less
- 6 • Forecast “expected” wind generation at 239 MW.h.

7
8 YEC’s firm generation GRA forecast for 2012 at 405,553 MW.h is based on forecast
9 YEC retail sales at 77,094 MW.h plus forecast firm wholesale sales to AEY at 296,000
10 MW.h, resulting in forecast YEC total firm sales of 373,094 MW.h plus forecast losses at
11 8.7% [see details in Tables 2.1 and 2.2 of YUB-YEC-1-6(c)].

12
13 The YEC firm wholesale sales to AEY is forecast net of LTA Fish Lake generation.

14
15 **(k)**

16
17 “YEC’s actual LTA Thermal Generation (MWh)” at 15,622 MW.h in Line B5 of Table 1-1
18 is the long-term average thermal generation as determined using the approved DCF
19 Term Sheet Table and actual 2012 generation [Line 15 of Table 1 of Attachment 1 to
20 Appendix 3.5 of YEC’s 2017-18 GRA].

21
22 The LTA thermal generation for actual 2012 generation in Line B5 of Table 1-1 is
23 calculated using the approved DCF Table 1.1 [Approved DCF Term Sheet, YUB Order
24 2015-06] and the actual load of 423,310 MW.h for 2012 net of LTA Fish Lake and wind
25 generation⁸]. As per this DCF Table 1.1, the LTA thermal for actual 2012 generation
26 equals 14.1 GW.h for 420 GW.h firm load plus 46% of 3.31 GW.h.

27
28 The calculation of the LTA thermal generation for actual 2012 generation is not affected
29 by operational decisions during 2012.

⁸ “LTA” and “expected” have the same meaning. See response to YUB-YEC-1-1(h) and YUB-YEC-1-1(i) for more detailed review of the terminology used in the tables in the ERA Application.

1 **(l)**

2
3 The approved GRA LTA thermal forecast for 2012 at 7,926 MW.h, per line B6 of Table
4 1-1, is based on YEC's approved 2012 GRA Compliance Filing for the 2012-13 GRA,
5 Appendix 1.1, Table 1.1-1: Diesel Generation and Fuel Expense Forecast. It is based on
6 the forecast firm generation at 405,314 MW.h, determined net of LTA wind and Fish
7 Lake generation, and the approved DCF Table 1.1 [Approved DCF Term Sheet, YUB
8 Order 2015-06].⁹

9
10 **(m)**

11
12 Line C2 of Table 1-1 estimates the Rider J revenues that YEC received from the added
13 AEY wholesales that exceeded the GRA forecast in 2012.

14
15 YEC has identified that 71.8% of YEC 2012 added wholesales (i.e., higher than GRA
16 forecast) occurred in the last six months of 2012 when the Rider J applied (see below),
17 and added Rider J revenues for 2012 have therefore been estimated only for the added
18 wholesales that occurred in the last six months of 2012.

19
20 Rider J was applicable in 2012 only for the last six months. Average Rider J revenues
21 per kW.h were used for the last six months based on YEC records in order to provide an
22 accurate estimate per kW.h, YEC does not have hourly and daily wholesale information
23 for 2012, and such information is not needed for the estimates required in this instance.

24
25 YEC estimated the \$0.00663/kW.h average Rider J for incremental wholesales based on
26 Yukon Energy's average Rider J revenues from AEY retail customers of \$0.00924 per
27 kW.h of firm wholesales in last six months of 2012 when Rider J was applicable, times
28 71.8% to reflect the portion of the 2012 wholesale change of 13,272 MW.h that occurred
29 in the last six months of 2012. Please see Table 1 below for the half-year breakdown of
30 wholesales for 2012 as well as estimation of 71.8%.

⁹ The DCF table shows 7.8 GW.h at 405 GW.h plus 40% of the balance of the firm forecast load (40% of 0.314 GW.h).

1 **Table 1: Wholesales for 2012 (half years) – GRA Forecast and Actuals**

		2012/13 GRA	Actuals	Difference	Estimated Impact of Fish Lake	Difference After Fish Lake Impact
2012	January-June	149,950,000	154,066,954	4,116,954 -	376,289	3,740,665
	July-December	146,050,000	156,196,923	10,146,923 -	615,751	9,531,172
	January-June	50.7%	49.7%	28.9%	37.9%	28.2%
2	July-December	49.3%	50.3%	71.1%	62.1%	71.8%

1 **TOPIC:**

2

3 **REFERENCE:** YEC ERA Part 1 Application, Part 1, page 1-4.

4

5 **ISSUE/SUB-ISSUE:** YEC revenue Impact per kW.h Changes in Wholesales

6

7 **QUOTE:** b. \$0.00663 per KW.h of incremental wholesales based on Yukon
8 Energy's average Rider J revenues from AEY retail customers of
9 \$0.00924 per kW.h of firm wholesales in last six months of 2012 when
10 Rider J was applicable, times 71.8% to reflect the portion of the 2012
11 wholesale change of 13,272 MW.h that occurred in the last six months of
12 2012 (this revenue change applies to wholesale changes net of Fish Lake
13 hydro generation variances from long-term average; Rider J charges in
14 2012 of 6.4% applied from July 1 to December 31).

15

16 **PREAMBLE:**

17

18 **QUESTION:**

19

20 a) Please explain why the "average Rider J revenues" is used.

21

22 b) Please explain and provide the derivation of the 71.8%.

23

24 c) Please explain how it was determined that 71.8% of the change in wholesales
25 occurred in the last 6 months of 2012. How was the timing of that change
26 verified?

27

28 **ANSWER:**

29

30 **(a) through (c)**

31

32 Please see response to YUB-YEC-1-1 (m).

1 **TOPIC:**

2

3 **REFERENCE:** **YEC ERA Part 1 Application, Part 1, page 1-5.**

4

5 **ISSUE/SUB-ISSUE:** Change in ERA amount for 2012

6

7 **QUOTE:** The increase of \$62,000 from the \$439,000 amount estimated in YEC's
8 April 7, 2015 ERA filing, and referenced in the Yukon Court of Appeal
9 Order, is entirely due to refinements in the revenue impact assessments.

10

11 **PREAMBLE:**

12

13 **QUESTION:**

14

15 a) Why was the April 7, 2015 amount of \$439,000 an estimate? Please explain.

16

17 b) What refinements were needed in "the revenue impact assessments"?

18

19 c) How long after a fiscal year-end does YEC determine final ERA amounts?

20

21 **ANSWER:**

22

23 **(a) and (b)**

24

25 The "refinements" needed in the ERA revenue impact assessment for 2012 were a
26 required correction to mistakes in the earlier estimates for 2012. The term "estimate"
27 references the need to carry out calculations, based on specified assumptions related to
28 the revenue impact assessment.

29

30 The specific required corrections to the revenue impact assessment are detailed below.

31

32 The April 7, 2015 amount of \$439,000 for the ERA charge estimated the following
33 (\$000):

- | | |
|---|---------|
| 34 • Wholesale Change: Cost Impact (YEC thermal generation costs) | \$1,773 |
| 35 • Wholesale Change: Revenue Impact (YEC revenues) | \$1,334 |
| 36 • ERA Charge (rebate) to AEY [Net added cost (cost saving) to YEC] | \$ 439 |

1 Table 1-1 of the YEC ERA Part 1 Application estimates an ERA charge to AEY for 2012
2 of \$501,000, based on the following estimates (\$000):

- | | | |
|---|--|---------|
| 3 | • Wholesale Change: Cost Impact (YEC thermal generation costs) | \$1,773 |
| 4 | • Wholesale Change: Revenue Impact (YEC revenues) | \$1,272 |
| 5 | • ERA Charge (rebate) to AEY [Net added cost (cost saving) to YEC] | \$ 501 |

6

7 The only change in the above ERA charge estimates for 2012 is for the correction to the
8 revenue impact, where the more recent estimate is \$62,000 lower than the April 7, 2015
9 estimate.

10

11 The corrections to the ERA revenue impact assessment for 2012 are reviewed at pages
12 1-5 to 1-6 of the ERA Part 1 Application. In summary, the \$62,000 decrease in the
13 estimated revenue impact assessment for 2012 relates to two corrections:

14

15 1) The estimate for Rider J revenue amounts per kW.h of wholesales in 2012
16 needed to be reduced by \$52,000 from the earlier estimate to reflect actual Rider
17 J charges as reviewed below:

18

19 • The earlier estimate was incorrectly based on the full revenue shortfall of
20 6.85% for all of 2012, which amount was not in fact recovered from
21 customers through any Rider J charge applicable in 2012.

22

23 • The corrected estimate is based on the actual interim Rider J of 6.40%
24 that was charged in 2012 only from July 1 to December 31.

25

26 2) The revenues assessed for wholesales changes in 2012 due to Fish Lake hydro
27 generation variances from LTA needed to be reduced by \$10,000 to reflect actual
28 YEC revenues related to these Fish Lake hydro generation variance impacts on
29 YEC wholesales, as reviewed below:

30

31 • The earlier estimate incorrectly assumed \$10,000 of Rider J revenue had
32 resulted in 2012 from the Fish Lake hydro generation reduction impact to
33 increase wholesales; however, there is no basis for assuming any change
34 in Rider J revenues due to Fish Lake hydro variances from the approved
35 LTA, i.e., this variance is not related to any change in AEY retail sales,
36 and therefore has no impact on Rider J revenues.

1
2
3
4
5
6
7
8
9

- The corrected estimate does not include any Rider J revenues related to the Fish Lake hydro generation reduction impact to increase wholesales, i.e., the only revenue impact is the estimated Energy Charge revenue changes on incremental wholesales resulting from the Fish Lake hydro generation reduction from the approved LTA.

(c)

10 Final ERA amounts can be determined on the same timeline as the final DCF amounts
11 for each fiscal year (i.e., before the end of the first quarter of the next fiscal year).

1 **TOPIC:**

2

3 **REFERENCE:** YEC ERA Part 1 Application, Part 1, page 1-6.

4

5 **ISSUE/SUB-ISSUE:** Change in ERA amount for 2012

6

7 **QUOTE:** Revenue impacts on incremental wholesales resulting from Fish Lake
8 hydro generation impacts: overall revenue reduction from earlier
9 estimate by \$10 thousand for 2012...

10

11 **PREAMBLE:**

12

13 **QUESTION:**

14

15 a) If Fish Lake hydro is above or below forecast it will ultimately impact the level of
16 wholesale purchases (assuming load is constant). If you have accounted for the
17 changes in wholesales, then please explain why a Fish Lake adjustment is
18 necessary. Please explain whether such an adjustment results in double
19 counting.

20

21 **ANSWER:**

22

23 **(a)**

24

25 To understand the adjustments made to the April 7, 2015 ERA revenue-related
26 estimates, please see the response to YUB-YEC-1-3(a and b).

27

28 Wholesale changes for firm sales by YEC to AEY arise from two factors:

29

- 30 1. Changes in AEY retail sales that result in changes to wholesales; and
31 2. Changes in Fish Lake hydro generation that result in changes to wholesales.

32

33 When estimating wholesale change impacts on YEC revenues, changes in the RS 42
34 Energy Charge revenues apply to both of the above wholesale changes. However, YEC
35 revenues from retail rate rider impacts (e.g., from Rider J revenues) arise only from
36 wholesale changes arising from the first of the above wholesale changes (i.e., changes

1 in Fish Lake hydro generation do not reflect any change in AEY retail sales or in YEC
2 Rider J revenues).
3
4 The referenced revenue reduction from the earlier estimate by \$10,000 for 2012
5 reflected the need to correct the earlier estimate, i.e., the earlier estimate had incorrectly
6 assumed Rider J revenue impacts related to the incremental wholesales resulting from
7 Fish Lake hydro generation impacts in 2012.

1 **TOPIC:**

2

3 **REFERENCE:** **YEC ERA Part 1 Application, Part 1, pages 1-6 to 1-7.**

4

5 **ISSUE/SUB-ISSUE:** Concerns noted in Order 2017-08

6

7 **QUOTE:** In summary, Yukon Energy's response to the above direction is that no
8 adjustments are needed to the ERA amount of \$501,000 for 2012
9 payable by AEY to YEC to account for the concerns noted in Order 2017-
10 08. (Page 1-6)

11

...

12 1. Yukon Energy's actual diesel generation costs for 2012 were
13 determined based solely on the DCF Term Sheet table as approved by
14 the Board for determining expected diesel generation for the actual grid
15 load in 2012.

16

...

17 2. Any variances in actual diesel generation in 2012 from YECSIM
18 forecasts as approved by the Board for the specified 2012 water and load
19 conditions and the DCF Term Sheet table (including all such potential
20 variances noted in the Board's Appendix A: Reasons for Decisions to
21 Order 2017-08) had no impact on the final diesel generation costs
22 incurred by Yukon Energy in 2012.

23

24 • YEC's final diesel generation costs for 2012 at GRA approved fuel
25 prices per kW.h were fully determined according to the expected
26 diesel generation as estimated using the approved DCF Term
27 Sheet.

28

29 • While actual diesel generation affected the payment to the DCF
30 for 2012, it did not affect the total diesel generation cost incurred
31 by YEC as determined by the DCF Term Sheet. In short, the sum
32 of actual diesel generation and the DCF payment always must
33 equal the DCF Term Sheet expected total thermal generation for
34 the actual 2012 grid load.

1 **PREAMBLE:**

2
3 **QUESTION:**

- 4
- 5 a) Given the above-noted response, how are such activities as enhancing winter
6 storage and changes due to actual system operations accounted for?
7
- 8 b) If the response to part (a) of this question is that those variance are accounted
9 through the DCF, then does this mean that the DCF includes items other than
10 changes in forecast water levels?
11
- 12 c) Please confirm whether for 2012, actual diesel generation costs and final diesel
13 generation costs for 2012 are one and the same. Moreover, please confirm that
14 the second bullet could be rewritten as “YEC’s **actual or final diesel generation**
15 **costs** for 2012 at GRA approved fuel prices per kW.h, were fully determined
16 according to the expected diesel generation as estimated using the approved
17 DCF Term Sheet for the actual grid load in 2012.”
18
- 19 d) If (c) is not confirmed, please explain what these terms refer to.
20
- 21 e) With respect to the second bulleted item under 2 in the above quote, please
22 confirm that actual diesel generation equals total thermal generation for 2012.
23
- 24 f) The second bulleted item under 2 in the above quote, states that the “**sum of**
25 **actual diesel generation and the DCF payment always must equal the DCF**
26 **Term Sheet expected total thermal generation for the actual 2012 grid load.**”
27 If the actual diesel generation for 2012 equals the DCF Term Sheet expected
28 total thermal generation for the actual 2012 grid load, please explain the rationale
29 for a DCF payment.
30

31 **ANSWER:**

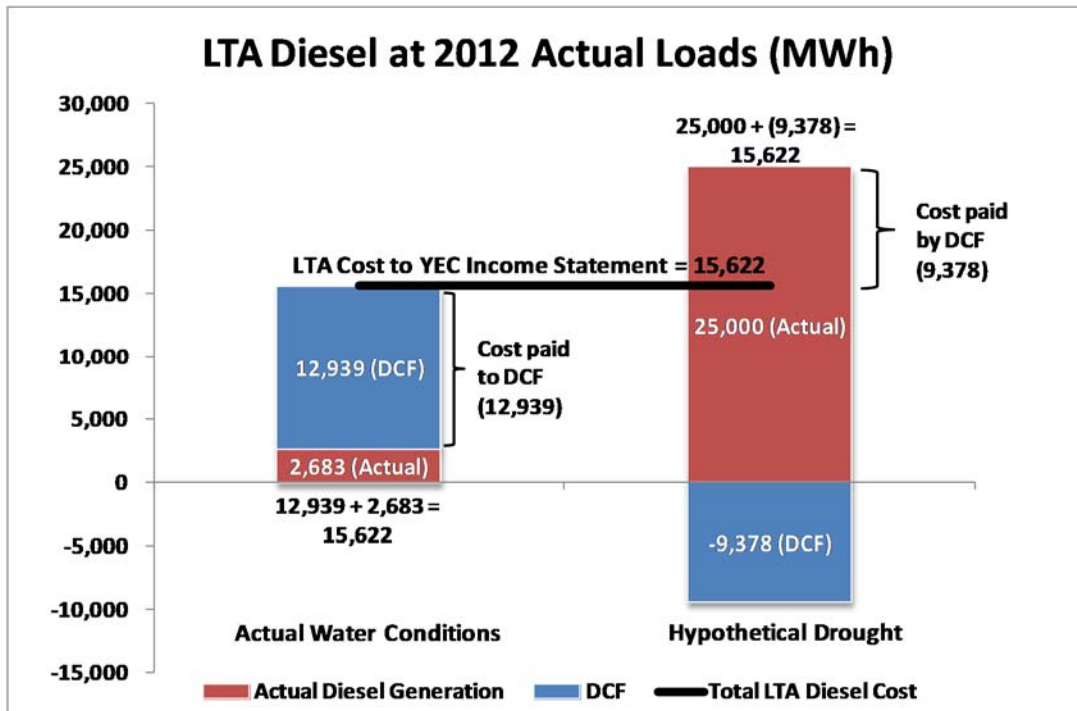
32
33 **(a)**

34
35 YEC’s final diesel generation costs for 2012 at GRA approved fuel prices were fully
36 determined according to “expected” diesel generation as estimated using the approved

1 DCF Term Sheet. While actual diesel generation affected the amount that YEC paid to
 2 the DCF for 2012, it did not affect the total diesel generation cost incurred by YEC as
 3 determined by the DCF Term Sheet.

4
 5 Figure 1 below demonstrates LTA diesel generation for 2012 based on 2012 actual total
 6 generation. It shows how the LTA generation and cost to YEC remains unchanged, even
 7 when water conditions are changed dramatically from the actual 2012 water conditions.
 8 Figure 1 also shows how actual diesel generation operated by YEC (net of capital
 9 projects and RFID diesel generation) can vary based on water conditions, while the LTA
 10 diesel generation remains unchanged due to payments into or out of the DCF after the
 11 year end.

Figure 1: LTA Diesel at 2012 Actual Loads (MW.h)



15
 16
 17 Activities by operators in any fiscal year such as enhancing winter storage and changes
 18 due to actual system operations could impact the actual diesel generation that occurs in
 19 the year. Such activities could therefore affect the diesel generation amount transferred
 20 into or out of the DCF, but would not affect YEC's final LTA diesel generation costs for

1 the year, i.e., YEC's final diesel generation costs for the year would continue to be fully
2 determined according to "expected" LTA diesel generation as estimated using the
3 approved DCF Term Sheet.

4
5 **(b)**

6
7 Payments into or out of the DCF in any year can potentially be affected by items other
8 than changes in forecast water levels, including such activities as enhancing winter
9 storage and changes due to actual system operations. However, as noted in response to
10 (a) above, such items do not affect the final LTA thermal generation amount for the year
11 as estimated using the approved DCF Term Sheet and total actual generation load for
12 the year, and therefore such items do not affect YECs' final diesel generation costs for
13 the year.

14
15 YECSIM provides LTA estimates of hydro and thermal generation for specific grid loads,
16 based on a weekly time step and all of the other factors included in this model. YEC's
17 final actual thermal generation costs for 2012 were determined based on the LTA
18 thermal generation estimate derived from the approved DCF Term Sheet Table, and
19 these thermal generation costs were therefore not affected by any operational decisions
20 made in 2012.

21
22 Overall, the YECSIM model as used to determine the DCF Term Sheet, estimates on a
23 consistent basis the long-term average hydro and diesel generation for specific grid
24 loads. The YECSIM estimates are based on specified historic water inflows, system
25 configurations, operating rules, and other model specifications as reviewed separately in
26 the YECSIM User Manual and Appendix 2.4 of the ERA Application. Actual operation
27 decisions in any one year may lead to less thermal generation than the DCF Term Sheet
28 would estimate for the actual water conditions and load (in which case YEC's payment
29 into the DCF will be higher than would have occurred absent such operation decisions);
30 the reverse would occur if actual operation decisions in any year lead to more thermal
31 generation than the DCF Term Sheet would estimate for the actual water conditions and
32 load.

33
34 The key operation decisions affecting actual thermal generation in any year reflect use of
35 the available water, and YEC's operations are designed to facilitate efficient use of the
36 available water on an ongoing basis. The goal is to use as much water as allowed in

1 order to reduce thermal generation requirements. To this end, YEC's staff continuously
2 monitor the elevations in YEC's reservoirs, based on actual levels and the trajectory of
3 the water usage to low supply levels. Based on this monitoring, operators are advised
4 what flow of water they can access. Updates are done several times a week, but can be
5 daily, especially when approaching low supply levels in spring.

6
7 **(c) and (d)**
8

9 In reference to the above quotes from the YEC ERA Part 1 Application, "actual diesel
10 generation costs" (as referenced in bullet item 1) and "final diesel generation costs" (as
11 referenced in bullet item 2) for 2012 are intended to be the same. In this context, "actual
12 diesel generation" in 2012 (as referenced in bullet item 2) is not related to "actual diesel
13 generation costs" incurred by YEC (they are based on LTA diesel generation as
14 estimated using the approved DCF Term Sheet for the actual grid load in 2012).

15
16 Accordingly, the second bullet item could be rewritten as "YEC's actual or final diesel
17 generation costs for 2012 at GRA approved fuel prices per kW.h were fully determined
18 according to the expected diesel generation as estimated using the approved DCF Term
19 Sheet for the actual grid load in 2012."

20
21 **(e)**
22

23 With respect to the second bulleted item under 2 in the above quote, "actual diesel
24 generation" for 2012 equals total net diesel generation for 2012, excluding diesel
25 generation related to capital projects and RFID. In 2012 (and 2013), all YEC thermal
26 generation was diesel generation.

27
28 As reported in Table 1 of Attachment 1 to Appendix 3.5 of YEC's 2017-18 GRA filing,
29 actual diesel generation in 2012 was as follows:

- 30
31
- Total diesel generation of 3,057 MW.h;
 - Diesel generation charged to capital and RFID of 373 MW.h;
 - Total Net diesel generation of 2,683 MW.h used for DCF payment or rebate amount determinations for 2012.
- 32
33
34

1 **(f)**

2

3 The question is assumed to be asking for assessment of a hypothetical situation.

4

5 Actual 2012 total net diesel generation relevant to DCF payment or rebate amount
6 determinations was 2,683 MW.h (see response to (e) above, and Figure 1 in response to
7 (a) above). This diesel generation amount based on actual generation in 2012 was well
8 below the DCF Term Sheet expected total thermal generation of 15,622 MW.h for the
9 actual 2012 grid load (as reported in Table 1 of Attachment 1 to Appendix 3.5 of YEC's
10 2017-18 GRA filing).

11

12 If the actual total net diesel generation for 2012 had in fact equaled the DCF Term Sheet
13 expected total thermal generation for the actual 2012 grid load there would be no
14 payment into or out of the DCF for 2012.

1 **TOPIC:**

2

3 **REFERENCE:** YEC ERA Part 1 Application, Part 1, pages 1-8.

4

5 **ISSUE/SUB-ISSUE:** Efficiencies and inefficiencies related to actual operation of its
6 hydro generation facilities

7

8 **QUOTE:** Any efficiencies or inefficiencies related to actual YEC operation of
9 its hydro generation facilities had no impact on Yukon Energy's
10 final thermal generation cost or net income for 2012, even if such
11 factors affect the amounts for YEC's transfers into or out of the
12 DCF.

13

14 **PREAMBLE:**

15

16 **QUESTION:**

17

18 a) Please confirm that YEC's operation of its hydro generation facilities has no
19 impact on YEC's final thermal generation cost nor net income. If confirmed,
20 please explain.

21

22 b) To clarify, based on the above quote, can items other than changes in forecast
23 water levels affect the DCF? Please explain.

24

25 c) As provided for 2013 in tables 2.1¹ and 2.2² of YEC's 2017-18 General Rate
26 Application, please provide forecast and actual values for 2012, 2014, 2015 and
27 2016.

28

29 **ANSWER:**

30

31 **(a)**

32

33 Confirmed.

¹ Summary of Customers, Energy Sales and Revenues.

² Summary of Energy Balance, Losses, and Peak.

1 Yukon Energy's actual thermal generation cost and net income are determined each
2 year solely based on the DCF Term Sheet Table [Table 3.4-1] as approved by the Board
3 for determining expected diesel generation for the actual grid load. As YEC's final
4 thermal generation expense for each year is based solely on the DCF Term Sheet Table
5 using the actual generation for the year, there are no impacts due to efficiencies or
6 inefficiencies related to actual YEC operation of its hydro generation facilities. However,
7 these factors can impact the actual diesel generation operation in each year which
8 affects the amounts transferred into or out of the DCF.

9
10 Please also see response to YUB-YEC-1-5 (a through f), and Figure 1 in the response to
11 YUB-YEC-1-5(a).

12
13 **(b)**

14
15 Changes to the DCF amounts can be affected by items other than changes in water
16 levels. In this regard, it is important to distinguish (1) the LTA thermal generation
17 amounts as provided in the DCF Term Sheet Table, and (2) factors affecting the DCF
18 fund amounts.

19
20 With regard to LTA thermal generation amounts as provided by the DCF Term Sheet
21 Table – it is noted that these will not change for 2012. Application of this DCF Term
22 Sheet Table to future year DCF determinations could be challenged in the event that
23 mine loads materially changed or other material changes occurred affecting renewable
24 generation capabilities.

25
26 With regard to factors affecting DCF fund amounts [in 2012 or in future years], it is noted
27 that items other than changes in water levels from LTA or expected (as per the approved
28 DCF Term Sheet Table) can affect amounts for YEC's transfers into or out of the DCF at
29 each year end.

30
31 Specifically, items, such as efficiencies or inefficiencies related to actual YEC operation
32 of its hydro or thermal generation facilities in any specific year are not addressed in LTA
33 estimates such as those provided by YECSIM. If operational decisions result in the
34 system being run more efficiently than assumed in the LTA estimates, then there will be
35 more hydro generation [and less thermal] and a larger payment by YEC into the DCF (or
36 a reduced rebate to YEC from the DCF); if operational decisions result in less efficient

1 operation and higher diesel generation than assumed in the LTA estimates, then the
2 YEC payment into the DCF will be smaller (or the rebate to YEC from the DCF will be
3 larger).

4
5 Overall, YEC seeks to operate its facilities as efficiently as possible. The goal is to use
6 as much water as allowed in order to reduce thermal generation requirements. To this
7 end, YEC's staff continuously monitor the elevations in YEC's reservoirs, based on
8 actual levels and the trajectory of the water usage to low supply levels. Based on this
9 monitoring, operators are advised what flow of water they can access. Updates are done
10 several times a week, but can be daily, especially when approaching low supply levels in
11 spring.

12
13 **(c)**

14
15 Please see extended version of Table 2-1 and Table 2-2 below that now includes
16 approved and actual numbers for 2012. For regulatory purposes, including ERA and
17 DCF determinations, the approved numbers for 2013 through 2016 are the 2012/13
18 GRA test years [i.e., 2013 approved].

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 Energy Reconciliation Adjustment (ERA)
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Table 2.1
Summary of Customers, Energy Sales and Revenues

Line No.	Description	2012 Approved	2012 Actual	2013 Approved	2013 Actual	Approved [2013]	2014 Actual	Approved [2013]	2015 Actual	Approved [2013]	2016 Actual
1	Residential										
2	Customers	1,526	1,529	1,536	1,559	1,536	1,561	1,536	1,588	1,536	1,609
3	Sales in MWh	12,325	13,289	12,408	13,385	12,408	13,327	12,408	13,121	12,408	13,390
4	MWh sales per customer	8.1	8.7	8.1	8.6	8.1	8.5	8.1	8.3	8.1	8.3
5	Revenue (\$000s)	1,803	1,927	1,815	1,943	1,815	1,938	1,815	1,913	1,815	1,956
6	Cents per KWh	14.6	14.5	14.6	14.5	14.6	14.5	14.6	14.6	14.6	14.6
7	General Service										
8	Customers	460	464	467	470	467	475	467	480	467	488
9	Sales in MWh	21,693	22,446	22,620	22,283	22,620	23,616	22,620	24,551	22,620	24,994
10	MWh sales per customer	47.1	48.4	48.4	47.4	48.4	49.8	48.4	51.1	48.4	51.2
11	Revenue (\$000s)	3,582	3,622	3,735	3,621	3,735	3,894	3,735	4,048	3,735	4,180
12	Cents per KWh	16.5	16.1	16.5	16.3	16.5	16.5	16.5	16.5	16.5	16.7
13	Industrial										
14	Sales in MWh	42,783	44,030	40,592	40,513	40,592	36,302	40,592	37,186	40,592	41,169
15	Revenue (\$000s)	4,955	5,083	4,787	4,595	4,787	3,958	4,787	4,159	4,787	4,478
16	Cents per KWh	11.6	11.5	11.8	11.3	11.8	10.9	11.8	11.2	11.8	10.9
17	Street lights										
18	Sales in MWh	279	284	279	281	279	290	279	290	279	256
19	Revenue (\$000s)	88	90	88	89	88	92	88	92	88	88
20	Cents per KWh	31.6	31.6	31.5	31.6	31.5	31.6	31.5	31.6	31.5	34.5
21	Space lights										
22	Sales in MWh	15	14	15	14	15	14	15	14	15	14
23	Revenue (\$000s)	4	4	4	4	4	4	4	4	4	4
24	Cents per KWh	26.8	27.3	26.7	26.5	26.7	26.6	26.7	25.9	26.7	26.0
25	Total Company - Firm Retail & Ind.										
26	Customers	1,986	1,993	2,003	2,029	2,003	2,036	2,003	2,068	2,003	2,098
27	Sales in MWh	77,094	80,063	75,914	76,476	75,914	73,549	75,914	75,162	75,914	79,823
28	Revenue (\$000s)	10,432	10,725	10,429	10,252	10,429	9,886	10,429	10,214	10,429	10,705
29	Cents per KWh	13.5	13.4	13.7	13.4	13.7	13.4	13.7	13.6	13.7	13.4
30	Wholesale sales										
31	Sales in MWh	296,000	310,264	307,147	307,927	307,147	295,284	307,147	297,961	307,147	301,207
32	Revenue (\$000s)	24,562	25,809	25,487	25,546	25,487	24,503	25,487	24,725	25,487	24,994
33	Cents per KWh	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
34	Total Company - Firm										
35	Sales in MWh	373,094	390,326	383,061	384,403	383,061	368,833	383,061	373,122	383,061	381,030
36	Revenue (\$000s)	34,994	36,534	35,916	35,798	35,916	34,388	35,916	34,939	35,916	35,700
37	Cents per KWh	9.4	9.4	9.4	9.3	9.4	9.3	9.4	9.4	9.4	9.4
38	Secondary										
39	Sales in MWh	0	1,993	0	3,959	0	5,415	0	7,030	0	4,835
40	Revenue (\$000s)	0	165	0	275	0	410	0	544	0	371
41	Cents per KWh	0.0	8.3	0.0	6.9	0.0	7.6	0.0	7.7	0.0	7.7
42	Total Company										
43	Sales in MWh	373,094	392,319	383,061	388,363	383,061	374,248	383,061	380,152	383,061	385,865
44	Revenue (\$000s)	34,994	36,700	35,916	36,073	35,916	34,798	35,916	35,483	35,916	36,071
45	Cents per KWh	9.4	9.4	9.4	9.3	9.4	9.3	9.4	9.3	9.4	9.3
46	Rider J (\$000s)	3,672	1,882	6,163	6,288	6,163	6,167	6,163	6,172	6,163	6,342
47	Total Sales Revenues¹	38,666	38,581	42,079	42,360	42,079	40,966	42,079	41,655	42,079	42,413
48	Total Sales Revenues excluding secondary sales	38,666	38,416	42,079	42,086	42,079	40,556	42,079	41,111	42,079	42,042

4
5

Note:
 1. Excludes revenues from other revenues.

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Table 2.2
Summary of Energy Balance, Losses, Peak and Load Factor

Line No.	Description	2012 Approved	2012 Actual	2013 Approved ¹	2013 Actual	Approved [2013]	2014 Actual	Approved [2013]	2015 Actual	Approved [2013]	2016 Actual
Sales and Losses											
1	Total Energy Sales	373,094	392,319	383,061	388,363	383,061	374,248	383,061	380,152	383,061	385,865
2	Losses - MWh	32,459	34,390	33,326	35,127	33,326	28,076	33,326	37,883	33,326	32,186
3	Losses - %	8.7%	8.8%	8.7%	9.0%	8.7%	7.5%	8.7%	10.0%	8.7%	8.3%
4	Total Generation	405,553	426,709	416,387	423,490	416,387	402,323	416,387	418,035	416,387	418,051
5	Secondary Sales Related Generation	0	2,168	0	4,318	0	5,821	0	7,731	0	5,238
6	Firm Load Generation	405,553	424,541	416,387	419,172	416,387	396,502	416,387	410,304	416,387	412,812
Actual Generation - MWh											
Hydro Generation											
7	Whitehorse	218,044	230,216	222,299	221,312	222,299	219,243	222,299	234,063	222,299	232,820
8	Aishihik	122,092	143,253	124,475	137,991	124,475	112,095	124,475	97,330	124,475	100,111
9	Mayo	57,252	49,736	58,369	62,000	58,369	69,082	58,369	81,123	58,369	78,480
10	Total Hydro	397,388	423,206	405,143	421,303	405,143	400,421	405,143	412,517	405,143	411,411
11	Wind Turbine	239	445	238	277	238	337	238	650	238	509
Diesel Generation⁴											
12	Whitehorse	3,963	2,206	5,503	840	5,503	978	5,503	1,672	5,503	1,727
13	Faro	1,189	530	1,651	900	1,651	338	1,651	405	1,651	193
14	Dawson	2,774	298	3,852	135	3,852	223	3,852	1,477	3,852	938
15	Mayo	0	22	0	34	0	26	0	20	0	22
16	Total Diesel	7,926	3,057	11,006	1,910	11,006	1,566	11,006	3,574	11,006	2,879
17	LNG Generation ⁴	0	0	0	0	0	0	0	1,295	0	3,251
	Total Thermal⁴	7,926	3,057	11,006	1,910	11,006	1,566	11,006	4,868	11,006	6,131
Source - %											
18	Hydro Generation	98.0%	99.2%	97.3%	99.5%	97.3%	99.5%	97.3%	98.7%	97.3%	98.4%
19	LNG Generation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.8%
20	Diesel Generation	2.0%	0.7%	2.6%	0.5%	2.6%	0.4%	2.6%	0.9%	2.6%	0.7%
21	Wind Generation	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%
LTA Generation - MWh											
	LTA Hydro Generation	397,388	408,680	405,143	405,643	405,143	390,976	405,143	400,055	405,143	402,038
	LTA Wind Generation	239	239	238	238	238	238	238	238	238	238
	LTA Thermal Generation	7,926	15,622	11,006	13,291	11,006	5,288	11,006	10,011	11,006	10,536
	Total LTA Generation	405,553	424,541	416,387	419,172	416,387	396,502	416,387	410,304	416,387	412,812
Peak - MW⁵											
22	Integrated System	80.0	82.2	80.0	82.7	80.0	76.5	80.0	82.1	80.0	88.1

Notes to Table 2-2:

1. 2012 and 2013 Approved diesel forecasts assumed hydro generation at 100% of long-term average (LTA); and 2013 based on assumption that WCT would be in operation.
2. Actual thermal generation reflects actual generation required for maintenance, capital, RFID and all other generation, e.g., peaking.
3. Peak load is one-hour maximum load on the grid (forecasts assume weather normalized temperature).

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1 **TOPIC:**

2

3 **REFERENCE:** YEC ERA Part 1 Application, Part 1, pages 1-9 to 1-12.

4

5 **ISSUE/SUB-ISSUE:** ERA for the years 2013-2016 inclusive

6

7 **QUOTE:**

8

9 **PREAMBLE:**

10

11 **QUESTION:**

12

13 a) Is it YEC's position that the ERA amounts that it has included in Table 1-2 for
14 each of the years 2013-2016 inclusive are final and not subject to further
15 change?

16

17 b) If the Board approves the amounts in Table 1-2, is it YEC's position that all ERA
18 matters for the period 2013-2016 are closed? If not, then please explain what
19 remains outstanding.

20

21 **ANSWER:**

22

23 **(a)**

24

25 Confirmed.

26

27 **(b)**

28

29 Confirmed.