Appendix A to Board Order 2019-08

Reasons for Decision

1 Introduction

1. The Yukon Utilities Board (Board) received a September 23, 2019, application from Yukon Energy Corporation (YEC) filed to demonstrate its compliance with Board directions from Board Order 2019-04, issued September 12, 2019. The application (Second Compliance Filing) explained YEC's submissions regarding its intended compliance with the directions from Board Order 2019-04.

2. As part of YEC's compliance filing, it sought the following approvals:

a) Approval to set an ongoing Rider J at 22.32% for retail customers and at 18.67% for industrial customers effective October 1, 2019, if this Rider J rate is approved on or before September 27, 2019, and otherwise effective November 1, 2019, applicable to all YEC and AEY firm retail and industrial rates, including fixed Rider F and fixed monthly payments for major industrial rates. All AEY recoveries from Rider F would flow through to YEC.

b) Approval to set a time-limited Rider J1 to be in effect the same date that the above Rider J is effective, and to continue for 24 months, with Rider J1 at 8.76% if effective October 1, 2019, and at 8.99% if effective November 1, 2019, and applicable to all YEC and AEY firm retail and industrial rates, to collect the remaining 2017, 2018 and 2019 net revenue shortfall as well as required Rider F adjustments for 2017, 2018 and the first six months of 2019. All AEY recoveries from the riders would flow through to YEC. Effective 24 months after the rider is approved, Rider J1 would be set to zero.

c) Approval, effective January 1, 2017, of the Low Water Reserve Fund (LWRF) to replace the Diesel Contingency Fund (DCF) as described in the second compliance filing.

d) Approval of the ongoing Deferred Fuel Price Variance Account (DFPVA) mechanism for Rider F with deferred LNG fuel price variances using actual fuel mix as recommended in the second compliance filing application.

3. The Board noted that the planned close of record for this proceeding as contemplated in Board Order 2019-06 was November 4, 2019. The issuance of a decision does not coincide with the requested approval dates for the riders, as noted above. As it was aware of this issue, the Board submitted an email to YEC on October 15, 2019, requesting that YEC provide, in its cover letter to its information request responses, an update to its requested approvals to reflect an effective date of December 1, 2019. YEC provided the following update to its requested approval on October 22, 2019:

a) Approval to set an ongoing Rider J at 22.32% for retail customers and 18.67% for industrial customers, effective December 1, 2019, applicable to all YEC and AEY firm retail and industrial rates, including fixed Rider F and fixed monthly payments for major industrial rates. All AEY recoveries from Rider F would flow through to YEC.

b) Approval to set a time-limited Rider J1 of 9.25% to be in effect the same date that the above Rider J is effective, and to continue for 24 months, and applicable to all YEC and AEY firm retail and industrial rates. All AEY recoveries from Rider J would flow

through to YEC, to collect the remaining 2017, 2018 and 2019 net revenue shortfall as well as required Rider F adjustments for 2017, 2018 and the first six months of 2019. Effective 24 months after the rider is approved (that is, at November 30) or at such earlier month end when the $12.557 million shortfall has been recovered, Rider J1 would be set to zero.

c) Approval, effective January 1, 2017, of the Low Water Reserve Fund (LWRF) to replace the Diesel Contingency Fund as described in the second compliance filing.

d) Approval of the ongoing DFPVA mechanism for Rider F with deferred LNG fuel price variances using actual fuel mix as recommended in the second compliance filing.

4. In reaching the determinations set out within this decision, the Board has considered all relevant materials on the record of this proceeding. References in this decision to specific parts of the record are intended to assist the reader in understanding the Board's reasoning related to a particular matter and should not be taken as an indication that the Board did not consider all relevant portions of the record with respect to that matter.

2 Discussion

2.1 Compliance with Board Order 2019-04

5. The Board has reviewed the second compliance filing and other documents on the record and has provided the following comments, findings and directions on YEC's second compliance filing application.

3 Outstanding directions

3.1 Cost of debt

6. The Board stated the following in Appendix A to Board Order 2019-04:

> The Board finds that YEC has not explained why its cost of debt in the compliance filing is different from the approved levels in Board Order 2018-10. It is incumbent upon YEC to comply with the directions of the Board, or if it is not possible to comply with those directions, then to provide a full explanation as to why it is unable to comply with the specific direction of the Board. Because the Board is not able to reconcile the reasons for the forecast interest rate of 2.40 percent for 2017 and 2.23 percent for 2018, YEC is directed to comply with the Board's direction and use the forecast interest rate for each of 2017 and 2018 of 2.15 percent in its cost -of-debt calculations, to be reflected in YEC's second compliance filing.[1]

7. In its second compliance filing to its 2017-18 GRA, YEC stated:

> Yukon Energy's overall mid-year long-term debt determination of 2.40% for 2017 and 2.23% for 2018 includes use as approved in Board Order 2018-10 (paragraph 237) of the forecast interest rate for each test year of 2.15% for all additional long term debt (LTD) forecast for 2017 and 2018. The direction in Board Order 2018-10 related to additional

[1] Appendix A to Board Order 2019-04, page 2.

> LTD forecasts of $23.828 million for 2017 and $7.004 million for 2018, i.e. the Application's forecast additions to YEC LTD to be made in 2017 and 2018. The forecast additional LTD in the Compliance Filing is decreased to $21.940 million for 2017 and to $5.776 million for 2018, with interest on each of these additional LTD amounts at 2.15% in each test year (see Section 3, Schedule 11).
>
> The overall mid-year long term debt for 2017 and 2018 also includes actual interest on the remainder of the long-term debt undertaken by YEC prior to 2017; this explains the difference between 2.15% and the overall mid-year LTD for each test year. (See Schedule 11 of Section 3 of this Compliance Filing for the details.)[2]

8. YEC provided its full response to Board Order 2019-04 on pages 2-14 to 2-15 of its second compliance filing and in Schedule 11 of Section 3 of that filing.

9. The UCG said that, in Board Order 2018-10, the Board approved an interest rate of 2.15% for new long-term debt issued in 2017 and 2018. The UCG added that there was no specific reference provided as to where in Board Order 2018-10, Appendix A: Reasons for Decision, the YUB specifically said that the allowed 2.15% was only associated with new debt.[3] Therefore, the UCG submitted that, based on its review of the record for this proceeding, the cost of debt to be included in YEC's 2017 and 2018 revenue requirements should be based on an overall rate of 2.15%.

10. YEC noted that, in Appendix A to Board Order 2018-10, the Board stated:

> Therefore, for purposes of this decision, the Board accepts the forecast market rate for YEC's cost of debt of 2.15 per cent for each of the 2017 and 2018 test years.[4]
>
> And
>
> In order for YEC to maintain its debt ratio at 60 percent, YEC forecasts additional long-term debt (LTD) of $23.828 million for 2017 and $7.004 million for 2018. The forecast interest rate for both years is 2.15 percent.[5]

Views of the Board

11. The Board has reviewed the relevant sections of YEC's second compliance filing and agrees that the responses from YEC reflect the Board's direction on cost of debt. YEC has complied with this direction and, therefore, no further response is required from YEC on this matter.

3.2 Thermal fuel mixture forecast

12. In Appendix A to Board Order 2019-04, the Board provided the following findings:

> The Board accepts the explanation of the thermal fuel mixture forecast. Although this matter was not originally tested in the GRA, the 90/10 forecast mix and forecast fuel prices within the LWRF have been reviewed by the Board and are reasonable for the

2 YEC Second Compliance Filing, pages 2-14 to 2-15.

3 UCG Final Argument, paragraph 7.

4 Appendix A to Board Order 2018-10, paragraph 237 and YEC Reply Argument, page 2.

5 Appendix A to Board Order 2018-10, paragraph 229 and YEC Reply Argument, page 2.

purposes of the GRA. Therefore, YEC is relieved of the obligation to comply with Direction 26 for the purposes of setting rates for the 2017-18 GRA.

Despite the Board's findings, YEC is directed to provide evidence to support its fuel-mix ratios in future GRAs to ensure that its thermal fuel mixture forecast and adjustments to the DFPVA are reasonable.[6]

13. YEC provided the following response regarding thermal fuel mix on Page 2.1-2 of Appendix 2.1 of YEC's second compliance filing:

> The new mechanism proposed in the 2017-18 GRA to provide that costs for YEC thermal generation savings (excess) are calculated so that YEC's final fiscal year expense for the total expected thermal generation (i.e. YEC expense after all transfers) is 90% LNG and 10% diesel as assumed in the GRA forecast, subject to the constraint that the LNG share of any transfer into or out of the LWRF cannot exceed 100%.[7]
>
> And
>
> Starting with YEC fiscal year 2018, costs for YEC thermal generation savings (excess) are calculated so that YEC's final fiscal year expense for the total expected thermal generation (i.e. YEC expense after all transfers) is 90% LNG and 10% diesel, subject to the constraint (when setting LWRF based on actual load) that the LNG share of any transfer into or out of the LWRF cannot exceed 100%. Fuel costs for this calculation are based on the last approved average cost of LNG and diesel fuel for YEC per kWh based on the most recent YEC GRA. The LWRF example in Table 2.1-3 reflects these requirements based on fuel prices in the 2017/18 GRA, with adjustments to comply with Board Order 2019-04.[8] (footnote removed)

14. YEC stated:

> In conclusion, YEC recommends that the Board approve adjustment to the second compliance filing LWRF fuel mix rules to remove any constraint that LNG share not exceed 100% of the transfer in order to simplify the approach so as to ensure that YEC final year-end costs after LWRF transfers equal the GRA fuel mix forecast.[9]

15. CW, in its argument, stated that the 90 LNG/10 diesel fuel mix ratio may not be optimal and the use of various fuels may have different environmental impacts.[10]

Views of the Board

16. YEC was not directed to provide further information regarding its forecast fuel mix for this 2017-18 GRA. However, the Board does note the following from YEC's second compliance filing:

> As reviewed in the first Compliance Filing, costs for YEC thermal generation savings (excess) based on actual final YEC load for a year were calculated so that YEC's final

6 Appendix A to Board Order 2019-04, pages 3-4.

7 YEC Second Compliance Filing, Appendix 2.1: Diesel Contingency Fund (DCF)/Low Water Reserve Fund (LWRF), page 2.1-2.

8 YEC Second Compliance Filing, Attachment 2.1-1: LWRF Term Sheet, page 2.1-2.

9 YEC Reply Argument, page 11.

10 CW Argument, paragraph 8.

fiscal year expense for the total expected thermal generation (i.e. YEC expense after all transfers) is 90% LNG and 10% diesel as assumed in the GRA forecast, subject to the constraint that the LNG share of any transfer into or out of the LWRF cannot exceed 100%. Board Order 2019-04 requires that the LWRF be determined based on estimated actual thermal generation for the forecast load; to comply with this direction, the percent of actual diesel at the estimated actual thermal generation for the forecast load is assumed to be the same as the actual diesel generation percentage of actual year-end YEC firm generation (see Attachment 2.1-1 and Tables 2.1-2 and 2.1-3 for examples).[11]

17. Actual fuel mixes for the years 2016-2018, inclusive, were as follows:[12]

Table 1. Actual thermal fuel mix (including generation, maintenance and capital)

Year	LNG (%)	Diesel (%)
2016	53	47
2017	68	32
2018	81	19

Table 2. Actual thermal fuel mix (excluding maintenance, capital and Reserve for Injuries and Damages (RFID)

Year	LNG (%)	Diesel (%)
2016	-	-
2017	73	27
2018	83	17

18. YEC provided further comment on the thermal fuel mix:

> The GRA forecast assumes that a practical and reasonable maximum LNG use for LTA generation is 90% LNG and 10% diesel. As reviewed during the oral proceeding, YEC did not have any specific "statistical" basis for deriving this 90/10 forecast split, beyond reference to the LTA thermal generation being driven by a small share of the 35 water years with low water conditions. YEC will review the LNG/diesel split in each future GRA as more experience is gained and as new loads and generation resources affect the grid.[13] (footnotes removed)

19. YEC provided the following response to a Board IR:

> Under YEC's proposed LWRF approach in the Application the final year end thermal ratio was not necessarily fixed. YEC proposed that LWRF transfers enable the final year end thermal ratio to move as close as possible to 90% LNG when the actual generation share for diesel exceeds 10%; YEC's final year end LNG share after all LWRF transfers under this approach cannot exceed 90%, i.e. YEC's final average thermal generation costs at year end cannot end up being less than the $0.1583/kWh amount per the GRA forecast. (See April 9, 2019 response to YUB-YEC-1-12 (a) and (b) for review of prior responses on this matter.)[14]

11 YEC Second Compliance Filing, Application, Appendix 2.1, page 2.1-5.

12 AEY-YEC-1-4(a), PDF page 11.

13 CW-YEC-1-3(c), PDF page 20.

14 YUB-YEC-1-2(a), PDF page 76.

20. It is not clear to the Board why the LNG transfers cannot exceed 90%, which appears to result in the fixed LNG transfer ratio of 90:10 used in the forecast (regardless of YEC use approved fuel prices i.e. the set ratio is not reflecting the reality and drivers of the underlying LNG and diesel costs). The Board is concerned with the 90:10 ratio when this ratio may not be reflective of cost causation.

21. Further, in response to IRs YEC added:

> YEC's proposed LWRF approach to address fuel mix simply enables YEC's final year end thermal generation average cost per kWh to reflect as closely as possible the approved GRA thermal generation average cost per kWh.[15]

22. The Board questions the use of the fuel mix calculation to approximate the GRA forecast thermal generation average cost as it is not numerically sound because it appears to target the result of a 90:10 ratio at year end rather than the expected use of thermal generation costs and diesel costs in a given year and, further, it does not reflect actual YEC thermal fuel mix results.

23. YEC further stated:

> As noted in more detail in YEC's April 9, 2019 response to YUB-YEC-1-18 (a) and (b), it is unclear what other options might be proposed for the LWRF approach to deal with the thermal ratio. YEC's operating philosophy with respect to thermal generation is to maximize LNG production in order to minimize costs and GHG emissions; the extent to which this is not feasible in practice is beyond YEC's control. One LWRF option to using the GRA ratio is to use the actual ratio for the year - however, the actual thermal ratio does not necessarily bear any relevance to the LTA fuel expense that YEC financial results are based on, and YEC also has no real ability to control the actual thermal ratio.[16]

24. The Board finds the above statement inconsistent with the regulatory principles of cost causality and appropriate rates design for sufficient recovery of utility costs. Ultimately, YEC, as a public utility providing service to customers, determines how thermal generation assets are utilized based on the drivers of thermal use. Other than variations in hydro availability, YEC does have a certain degree of management control as to the use and operation of its thermal generation assets.

25. Further, with a fuel portfolio of both LNG and diesel, as noted by YEC, it does not have sufficient data to determine its LTA fuel expense. Although YEC's stated goal to minimize costs and GHG emissions is laudable, the Board is of the view that YEC's rates should be reflective of the use of historical actual results to determine its forecasts rather than using past GRA approved amounts. The Board is concerned with YEC's approach to mirroring its final average thermal cost per kWh with its last approved GRA average thermal cost per kWh because it may not yield optimal rates or reflect cost causation.

26. YEC provided further comments on its fuel mix objective:

> In conclusion, LWRF rules regarding the thermal ratio can be simplified to ensure that the thermal ratio for final YEC costs after all LWRF transfers is the same as approved for the GRA thermal generation cost forecast. This approach would ensure that YEC's final

15 YUB-YEC-1-2(a), PDF page 76.

16 YUB-YEC-1-2, PDF pages 76-77.

> average thermal cost per kWh each year will equal the last approved GRA average thermal cost per kWh – and utilize the LWRF deferral account to accommodate actual cost variances from this GRA forecast that are beyond YEC's control. [17]
>
> …
>
> Overall, fuel mix rule options in the LWRF can have a direct impact on YEC final thermal costs (i.e., after all LWRF transfers) for a completed fiscal year. The stated objective is to end up with YEC actual fuel mix costs unchanged from the GRA forecast (based on 90% LNG and 10% diesel, using GRA forecast fuel prices).[18]
>
> …
>
> It is important to remember that forecast fuel mix for GRA forecasts assumes LTA thermal generation (and not any forecast of actual thermal generation at the forecast load). There is therefore no reasonable basis for assuming that LWRF transfer costs should be tied to actual fuel mix – and use of the GRA forecast fuel mix results in GRA average fuel costs being retained for YEC final actual (i.e. after LWRF transfers) thermal generation subject to LWRF transfers.[19]

27. Again, the focus should be on the reasonableness of the forecasts based on underlying evidence as to cost drivers and forecasting accuracy of amounts proposed to be included in revenue requirement. YEC's fuel mix assertions are not based on verifiable actual results from past years. Further direction on this issue will be provided in a subsequent section of this decision.[20]

3.3 Low Water Reserve Fund

28. The Board will discuss issues regarding the LWRF in three major sections. The first section will provide a background of the history of the LWRF and related accounts, given the breadth of the parties' submissions on the operation of the LWRF in this second compliance filing.

29. The second section pertains to the LWRF and compliance with the Board's directions in YEC's 2017-18 GRA and YEC's submissions in this second compliance filing.

30. The final section will give the Board's comments and future directions for the LWRF going forward.

3.3.1 Background

31. The LWRF and its predecessor the Diesel Contingency Fund (DCF) has had a long history in Yukon since its inception in 1989. The LWRF fund was inactive for many years until YEC sought to revive it as part of its 2012-2013 General Rate Application (GRA). In YEC's 2012-2013 GRA, YEC requested changes to the DCF to reflect the connection of the Whitehorse-Aishihik-Faro (WAF) and Mayo-Dawson (MD) grids and the addition of new hydro facilities. Further changes requested by YEC included that:

- The fund would operate outside of rate base,

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17 YUB-YEC-1-2(b), PDF pages 76-77.

18 YUB-YEC-1-8, PDF page 92.

19 YUB-YEC-1-14, PDF page 107.

20 See, for example, paragraphs 53 and 95.

- Fish Lake hydro would be excluded, and
- Diesel would be considered permanently on the margin.

32. YEC commented that one version of the DCF was created in a 1996-97 GRA negotiated settlement when the Faro mine was operating and the DCF only pertained to the WAF system.

33. The Board noted that the fund was established to ensure that ratepayers, rather than YEC, covered the risk of changes in grid diesel generation due to fluctuations in hydro generation resulting from factors outside of the utility's control (such as drought conditions). The effect of the DCF was to allow rates to be based on long-term forecast hydro generation versus short-term hydro generation. The intended effect of the DCF was to shield rates from volatility due to hydro generation variances based on fluctuating water levels.[21]

34. In Board Order 2013-01, the Board noted that the fund had been inactive since 1999. The Board noted other concerns with the DCF because:

- It excluded generation from Fish Lake (generation that could in effect reduce the need or use of diesel generation).
- The DCF had never been fully tested as it was the product of a negotiated settlement.
- The DCF masks market signals and that, in time of a drought, consumers will be removed from the signal to reduce consumption.
- The sporadic use of the fund raises issues of intergenerational inequity.

35. The Board did not approve YEC's DCF proposal but gave YEC the opportunity to provide a revised DCF proposal.[22]

36. YEC submitted a revised DCF proposal in its compliance application to Decision 2013-01. The Board, in Decision 2013-03, did not approve YEC's DCF submissions. It requested a revised DCF proposal, and YEC was to incorporate other non-diesel generation facilities (wind, Fish Lake hydro) forecasts into its model.

37. After further revisions to the DCF, the Board ruled in Board Order 2015-01 as follows:

> … the Board accepts the DCF as proposed by YEC because it is a fund for customers to smooth rate impacts for those occasions when hydro generation is less than LTA or to build up the fund when hydro generation is greater than LTA. The Board approves the DCF as proposed by YEC. However, the Board directs that the DCF fund is to be used only for variations from LTA water availability. Any application to utilize the fund in some other fashion will require the closing of the fund, the refunding of any balances to customers, and the direction for YEC to use short-term forecasts for its hydro generation for future GRAs.[23]

21 Appendix A to Board Order 2013-01, Reasons for Decision, paragraphs 237.

22 Appendix A to Board Order 2013-01, Reasons for Decision, paragraphs 255.

23 Appendix A to Board Order 2015-01, Reasons for Decision, page 14.

38. In Appendix A to Board Order 2018-10, the Board did not accept the DCF proposal filed by YEC. The Board provided guidance to YEC as to what the Board is expecting in GRA applications. In discussing long-term and short-term averages for forecasting purposes, the Board stated:

> …In determining the revenue requirements for these and future test years, the Board is focusing on the reasonableness of the forecasts and forecasting accuracy. Further, the onus is on YEC to adequately explain any variance between actual results and its forecast amounts. For these reasons, the Board directs YEC in future GRA filings to show actual hydro and thermal generation results when comparing previous and forecast test years.[24]

39. With respect to the DCF, the Board concluded that, given the isolated nature of the Yukon environment, the ramifications that low water events can have on electricity prices and the need to mitigate those impacts, a DCF-type of mechanism was required. The Board stated that a simpler mechanism for adjusting for variances between the approved forecast for hydro generation and thermal generation and actual hydro generation and thermal generation in a test year is needed. However, the Board found that the DCF is complex and that it does not show the hydro generation and thermal generation in a given year when actuals are determined because the actuals are based on modelled results. Therefore, the Board directed YEC to create a deferral account that reconciles forecasts with actuals, not modelled results.[25]

40. YEC filed a revision to its LWRF on February 25, 2019. In Board Order 2019-04 (first compliance filing decision), the Board did not accept YEC's revised LWRF. In that decision, the Board noted that YEC accepted the forecast risk for incremental generation costs for incremental loads in excess of the approved forecast.[26]

41. In the first compliance filing decision, the Board recognized there are two regulatory principles to be met. First, YEC bears the risk of revenue requirement items varying from approved GRA forecasts. Second, costs due to variances from forecast thermal generation fuel volumes should be assigned to the utility when those costs are due to variances from forecast load or maintenance requirements.[27] The Board found that the steps to separate thermal generation changes due to overall load changes from thermal generation changes due to water conditions included in the LWRF deferral account proposal did not adequately reflect these two regulatory principles.

42. Accordingly, the Board considered it necessary to preserve the principle that costs should be assigned to the utility when total load varies from forecast load. YEC's proposal in the compliance filing created an asymmetrical risk profile whereby YEC imposed certain risks – e.g. incremental generation costs to customers – and yet there is no offsetting of potential benefits that YEC would gain, and those benefits would not be shared with customers – e.g. incremental sales and amortization of costs over greater sales volumes. Therefore, the Board considered that incremental generation due to incremental load must be removed from the

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24 Appendix A to Board Order 2018-10, Reasons for Decision, paragraph 77.

25 Appendix A to Board Order 2018-10, Reasons for Decision, paragraphs 319-322.

26 Appendix A to Board Order 2019-04, Reasons for Decision, page 8.

27 Appendix A to Board Order 2019-04, Reasons for Decision, page 9.

LWRF calculations because this is a risk borne by the utility.[28] A second compliance filing was directed by the Board.

3.3.2 YEC's 2017-18 GRA Second Compliance Filing

43. YEC submitted its second compliance filing on September 23, 2019, and provided further changes to its proposed LWRF. YEC provided details of the changes to its LWRF in Appendix 2.1 and Attachment 2.1-1 (LWRF Term Sheet) of its September 23, 2019, second compliance filing. Included as part of the application is a revised Attachment 2.1-1, the LWRF term sheet which retains the general structure of the previously approved term sheet and fund procedures. Of the five items listed in the term sheet, the fifth on the list states:

> The new mechanism proposed in the 2017-18 GRA to provide that costs for YEC thermal generation savings (excess) are calculated so that YEC's final fiscal year expense for the total expected thermal generation (i.e. YEC expense after all transfers) is 90% LNG and 10% diesel as assumed in the GRA forecast, subject to the constraint that the LNG share of any transfer into or out of the LWRF cannot exceed 100%.[29]

44. YEC stated that it:

> … first determines (as provided for in the first Compliance Filing) the overall thermal generation cost change due to water condition changes for the actual load; the second step then assigns a portion of this thermal generation cost change to the forecast load for assignment to the LWRF as directed by the Board.[30]

45. YEC noted that the process is more complicated by the requirement to separate the variance between actual and forecast thermal generation that is due to overall YIS load changes from the thermal generation changes that are due to water condition changes.

46. For the 2017-18 test period, AEY and CW did not oppose the LWRF as proposed by YEC in the second compliance filing. UCG had specific comments on the term sheet, which are referenced below.

Views of the Board

3.3.2.1 Current test period

47. Board Order 2019-04 required YEC to determine what the actual thermal generation with water availability impacts would have been at the forecast (rather than the actual) level of load. To test YEC's assumptions, the Board requested in YUB-YEC-1-4 an explanation of YEC's separation of changes in thermal generation costs due to changes in water conditions and due to changes in load (actual load). The questions included:

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

28 Appendix A to Board Order 2019-04, Reasons for Decision, pages 9-10.

29 YEC Second Compliance Filing, Appendix 2.1, page 2.1-2.

30 YEC Second Compliance Filing, Appendix 2.1, page 2.1-3.

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

e) Regarding the response to part (c) above, in order to meet changing load conditions, at what point in a test year does YEC, through its operations, change its hydro generation from that reflected in the forecast for that test year? Please explain.[31]

48. The Board was seeking to determine if the generation mix (hydro and thermal) is expected to incrementally change as the expectation for load changes. For example, at the time of the forecast, YECSIM modelled generation output for the forecast load level. However, as the expectation for load changes, in this case, an upward change, does the incremental generation mix change (i.e. weight more heavily to thermal) versus hydro generation? If the generation mix changes on an incremental basis, how is this phenomenon reflected in YEC's separation of load and water level effects on the LWRF? Also, if there are differences, would they be material?

49. YEC responded that the question was in effect asking to rerun the model after each year, assuming forecast load and actual water conditions, in order to estimate actual thermal generation for the forecast load. YEC stated that this was not achievable with the current model. YEC added:

> The YECSIM model used for the 2017-18 GRA is designed, tested and used to determine LTA hydro and thermal generation for a specified load based on simulation of weekly grid system operation (assuming current hydro generation capabilities and licences) over 35 years of historical water records. It has not been used, and is not designed to be used, to assess retroactively what actual hydro and thermal generation would have been under various possible loads for specific conditions that actually occur in any one year (let alone to determine retroactively the estimated actual thermal generation in such a year for a forecast load that did not in fact occur).[32]

50. YEC has previously provided testimony that the results of the model cannot be retrospectively verified[33] and that the Board has previously identified its concerns with the verifiability of the model in Board Order 2015-01[34] and Board Order 2015-06.[35] The Board remains concerned that the estimate provided by YEC does not accurately reflect the generation costs for the incremental load and questions if the generation costs are muted by the modelling of the total load.

51. With respect to the second compliance filing term sheet, the UCG argued that the use of the term sheet increases the LTA thermal generation estimate used at the actual 2018 generation load.[36] After preparing responses to information requests and the technical session, YEC concluded that the term sheet approach provides a more accurate result and can be considered more straightforward to implement.

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31 YUB-YEC-1-4 (a-c)

32 YUB-YEC-1-4, page 3 of 4.

33 Appendix A to Board Order 2015-01, page 7.

34 Appendix A to Board Order 2015-01, page 13, where the YECL position was summarized regarding the inability to retroactively verify YECSIM results.

35 Appendix A to Board Order 2015-06, page 9.

36 UCG Final Argument, paragraph 27.

52. The Board agrees that the term sheet provides a more straightforward result than an estimate (the fixed change factor estimate) based on the term sheet. For the 2017-18 test period, the Board directs YEC to use the term sheet and to amend the paragraph that refers to the fixed change factor to remove fixed change factor references from the term sheet. Further, as the Board has ruled that the LWRF is only applicable up to forecast load, the Board only approves term sheet calculations that are equal to or below the forecast load.

53. The Board, in IR YUB-YEC-1-8, inquired about a paragraph in the term sheet concerning the thermal fuel mix. YEC responded that the paragraph was required as it establishes rules for addressing fuel mix to LTA thermal generation transfer costs. It should be noted that the Board previously accepted the fuel mix as part of YEC's 2017-18 GRA[37] and that no further direction was given for YEC to comply with on this issue. However, further information on fuel mix has been provided in YEC's second compliance filing. The Board will not reopen this issue in the compliance filing. However, due to the concerns the Board has regarding YEC's fuel mix calculations and the unverifiable nature of the results of those calculations provided in the second compliance filing and the resulting thermal fuel costs, those calculations will not be accepted by the Board for use in future GRAs.[38]

3.3.2.2 Term Sheet

54. Further, the Board asked YEC about the relevance of references to "Diesel on the Margin".[39] YEC responded that the removal of that paragraph from the term sheet would have no impact on YEC or on customers. Due to this response, the Board directs that the paragraph referring to Diesel on the Margin be removed from the term sheet.

55. In response to a Board IR concerning quarterly and annual reporting, YEC responded:

> … the LWRF implementation at fiscal year-end requires prior completion of a GRA process. Accordingly, LWRF determinations for GRA test years cannot be concluded until the GRA is concluded – and can be addressed therefore as part of the process for a GRA. After GRA test years have been addressed, the LWRF determinations should proceed on an annual basis until the next GRA test years occur.[40]

56. The Board agrees with YEC's proposal on reporting and accepts the inclusion of the paragraph regarding quarterly and annual reporting in the term sheet.

57. When asked about the quantum and cap[41] on the LWRF term sheet, YEC included the following response:

> "The DCF has been established to provide stability for rates, and to reflect the underlying long-term valuation of renewable hydro and wind resources (where economic feasibility typically is assessed based on long-term average energy supply). Rate stability is achieved, as noted 1 above by the Board in Order 2015-01, by limiting the requirement for separate rider collections/refunds to ratepayers, and by enabling ratepayers (to the extent practical) to pay the same LTA cost during droughts as during floods."

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37 Appendix A to Board Order 2019-04, pages 3-4.

38 For further discussion, see paragraphs 27 and 95.

39 YUB-YEC-1-9.

40 YUB-YEC-1-11.

41 YUB-YEC-1-10, page 1.

…

> "To achieve its objectives, the DCF needs robust threshold limits, i.e. maximum and minimum levels allowed before funds are dispersed (for overages) or replenished (when fund falls below minimum)."[42]

58. The response, in particular, the reflection of underlying long-term valuation of renewable hydro and wind resources and enabling ratepayers to pay the same LTA cost during droughts as floods, discusses the rate design criteria chosen by YEC. The Board does not agree with those parts of the above response. The rate design criteria used by YEC are not immutable regulatory principles. Because of these concerns and consistent with past decisions,[43] the Board finds that the LWRF needs to be simplified in YEC's next GRA application as discussed in the next section of the decision.

59. In consideration of the changes to the LWRF term sheet directed above and the outstanding concerns of the Board with respect to the LWRF, for the purposes of this 2017-18 GRA only, the Board will accept the LWRF submitted by YEC.

3.3.3 LWRF going forward

60. Interveners continue to express concerns with the LWRF as proposed by YEC.

61. AEY made the following comments in its argument:

- The model can neither be proven or disproven. It is AEY's view that YEC has proposed an elaborate forecast-and-true-up-to-another forecast system that cannot be tested or retroactively verified. [44]
- Given the burdensome record required to explain YEC's proposed mechanism and the risk introduced by its untestable model, the cost of keeping YEC's proposed mechanism does not satisfactorily justify the "key requirement." [45]
- The Board should reconsider the requirement to allocate thermal generation variances based on hydro availability or due to changes in load with due consideration for the ability to perform the requirement competently or accurately, the complexity of the model, and the ability to verify the results with actuals. [46]
- The Board should choose a simpler model and relax or remove the requirement to differentiate between thermal variance due to load and thermal variance due to water availability.[47]
- Shorter-term price signals are superior to "long-term average" price signals when considering hydro availability. [48] Ratepayers should receive a contemporaneous, transparent, and representative price signal in an effort to curb fuel usage and associated

42 YUB-YEC-1-10, pages 1-2.

43 See, for example, Appendix A to Board Order 2018-10, paragraph 320.

44 AEY Final Argument, paragraphs 10-11.

45 AEY Final Argument, paragraph 12.

46 AEY Final Argument, paragraph 13.

47 AEY Final Argument, paragraph 14.

48 AEY Final Argument, paragraph 16.

costs. YEC's proposed mechanisms lack transparency and obscure actual costs facing ratepayers.[49]

- AEY disagrees with using the expected long-term cost of power. AEY's view is that accrual-based accounting and decades-long depreciation rates help to spread the costs and benefits of legacy hydro assets to different generations of ratepayers. Using the expected long-term cost of power neglects current load and generation conditions facing the grid. AEY explained that, when there is a water shortage and thermal generation is being deployed, ratepayers should not be under the impression that their consumption has no impact on thermal generation. Further, the expected long-term cost of power will spread these thermal costs to future ratepayers.[50]
- Ultimately, AEY is concerned that YEC's mechanism design, with its delayed price signals and its expected long-term cost of power, makes no effort to influence ratepayer behaviour when thermal generation costs are accumulating. Absent a transparent, contemporary price signal for thermal costs, AEY is concerned that the overall cost of electricity will be higher (including any potential ERA charges).[51]
- YEC's proposed mechanism has relied on niche expertise in the Yukon regulatory framework and is not conducive to regulatory efficiency. Any deferral/contingency fund should (a) true up to actuals, and (b) be straightforward enough to be easily reviewed and tested by the Board (and other hearing participants) without any specialized labor.[52]
- AEY's view is that retroactively parsing these variances (load and changes in water levels) cannot be done with confidence. A better solution would abide by realistic and achievable principles, provide relevant price signals, and value simplicity over complexity. A straightforward deferral/contingency fund mechanism should be implemented.[53]

62. The UCG comments with respect to the LWRF included the following:

- The YUB must establish a reporting process such that specific information regarding the inputs to the LWRF deferral account is reported in a clear and consistent manner that allows for an easy reconciliation process.[54]
- Clear directions must be given to YEC to ensure that it files enough detail regarding the breakdown of these thermal generation costs (diesel vs. LNG), the RFID and all capital and maintenance fuel to ensure that updates to the LWRF deferral account are transparent and easily understood.[55]
- It is not clear from YEC's evidence whether the forecasts used in the current GRA could be significantly impacted by climate change that has evolved in more recent years.[56]
- The ongoing issues of not being able to easily and automatically separate diesel and LNG thermal generation.
- The lack of internal expertise at YEC to address all model changes and issues.

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49 AEY Final Argument, paragraphs 17-18.
50 AEY Final Argument, paragraph 22.
51 AEY Final Argument, paragraph 23.
52 AEY Final Argument, paragraphs 24-25.
53 AEY Final Argument, paragraphs 26-27.
54 UCG Final Argument, paragraph 16.
55 UCG Final Argument, paragraph 17.
56 UCG Final Argument, paragraph 20.

- The UCG maintained its concerns with the lack of retrospective verification of the model.[57]

63. CW was concerned that:

- YEC relied on historic water year data and that simulation models of that type did not address trends in water levels beyond that which are incorporated in the historic data. The YECSIM model does not consider the effects of climate change.[58]
- That adequate controls are not in place to prevent YEC management from benefitting from the existence of the LWRF.[59]
- And, the more that a deferral or reserve account includes actual costs, the more risk is transferred to customers and away from the utility.[60]

YEC responses

64. YEC provided its responses to intervener comments.

YEC responses to AEY

- YEC stated that AEY accepts the LWRF for 2018 and rejects YEC's key principles for years after 2018. AEY's recommendation does not recognize the distinctive feature of the Yukon grid with respect to drought.[61]
- YEC has relied on the following principles regarding the LWRF:

    1. The risk of low water conditions, with respect to added costs for thermal generation, should be borne by the customers of the utility (Order 2018-10, para 318).

    2. Given the isolated nature of the Yukon environment, the ramifications that low water events can have on electricity prices and the need to mitigate those impacts, a DCF-type of mechanism is required (Order 2018-10, para 319).

    3. The LWRF (or earlier DCF mechanism) is a fund for "customers to smooth rate impacts for those occasions when hydro generation is less than LTA or to build up the fund when hydro generation is greater than LTA." (Board Order 2015-01, page 14)

    4. A +/- $8 million cap for the DCF/ LWRF was considered an acceptable balance between frequency of rider applications and ability to handle material (drought) changes in hydro availability. (Board Order 2015-01, page 15)

- YEC argued that these principles are consistent with past practice in Yukon and with regulation of other hydro utilities across Canada and any option to simplify the LWRF must still continue to meet the principles and specified objectives for the LWRF.
- No alternatives to the LWRF that meet the above noted core principles have been presented.

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57 UCG Final Argument, paragraph 23.
58 CW Final Argument, paragraph 5.
59 CW Final Argument, paragraph 6.
60 CW Final Argument, paragraph 9.
61 YEC Reply Argument, page 3.

- In response to AEY's request to relax or remove the requirement between thermal variance due to load and thermal variance due to water availability in favour of a simpler mechanism, AEY is effectively removing the underlying premise of the LWRF. The deferral account would no longer attempt to separate load change and water availability impacts. This would effectively result in passing all thermal-related risk (whether related to water, load changes or other events) to ratepayers.[62]
- AEY's recommendation regarding the future LWRF would in effect require all YEC load risk to be passed to ratepayers given AEY's proposal to stop separating load and water risks.
- In response to AEY's comment that YEC has not proven that it can accurately isolate changes in thermal generation due to load or hydro availability and that no intervener can disprove that YEC has not accurately isolated changes, YEC commented that, to justify abandoning LWRF principles, AEY would need to prove that the LWRF mechanism clearly fails to separate thermal generation changes due to water availability and, further, that this failure is of sufficient magnitude to justify the YUB abandoning its prior directions on this matter. AEY has failed to provide any such proof.[63]
- In summary, the Board has no basis today for abandoning this key requirement or for reversing its past decision to reject AEY's proposed diesel deferral account. Accordingly, AEY's argument on this matter should be rejected by the Board.[64]
- To counter the AEY assertion that most of the electric utility industry is moving toward shorter-term price signals via time-of-use rates and that shorter-term price signals are superior to long-term average price signals when considering hydro availability, YEC submitted that AEY's argument is far outside the scope of the second compliance filing and that it ignores completely evidence relevant to hydro jurisdiction utilities in general as well as to YEC's situation on the isolated Yukon grid.[65]
- YEC provided further response to AEY's comments regarding short-term pricing, that AEY failed to address how hydro-based electric utilities in Canada that are relevant to YEC's situation are addressing pricing as it relates to water availability. The evidence is that these utilities continue to use long-term water availability when developing forecast revenue requirements for rate setting purposes.
- Further, the Board in this proceeding approved LTA forecasts for the 2018 test year, and YEC has not been directed to file short-term forecasts once again for its next GRA.[66]
- YEC rejected the AEY position on price signals by stating that AEY's proposal would result in GRA or other proceedings being used to send price signals to ratepayers in order to modify consumption in response to high versus low water conditions. The idea that YEC can forecast drought and then send price signals in advance is nonsense.[67]

62 See response to YUB-YEC-1-1.
63 YEC Reply Argument, pages 4-5.
64 YEC Reply Argument, page 5.
65 YEC Reply Argument, page 6.
66 YEC Reply Argument, page 6.
67 YEC Reply Argument, page 7.

Views of the Board

65. Given the extensive submissions from parties, the Board will provide further comments on the following issues:

- LTA hydro generation forecasts (Section 3.3.3.1, starting at paragraph 66)
- Long-term cost of power (rate smoothing) (Section 3.3.3.2, starting at paragraph 68)
- Drought conditions (Section 3.3.3.3, starting at paragraph 80)
- Hydro generation forecast modelling (Section 3.3.3.4, starting at paragraph 83)
- Board Order 2019-04 (rate mitigation and related issues) (Section 3.3.3.5, starting at paragraph 86)

3.3.3.1 LTA hydro generation forecasts

66. AEY raised an issue with respect to the use of the long-term cost of power as determined by YEC. It should be noted that the Board's acceptance of LTA[68] as a forecast of hydro generation for the forecast load is not necessarily acceptance of LTA or long-term costs for power. Discussion of this issue follows in a later section.

67. The Board agrees with UCG and CW that YEC's LTA forecasts do not consider climate change results and, in the Board's view, this reduces the accuracy of YEC's hydro generation forecasts. YEC is directed to give this issue consideration in its next GRA. The Board is not looking for a climate change study. The Board expects YEC to comment on how it will factor in this issue.

3.3.3.2 Long-term cost of power and rate smoothing

68. The Board agrees with AEY submissions on the long-term cost of power, which are summarized below:

- That accrual-based accounting and decades-long depreciation rates help to spread the costs and benefits of legacy hydro assets to different generations of ratepayers.
- Using the expected long-term cost of power neglects current load and generation conditions facing the grid.
- Ratepayers should not be under the impression that their consumption has no impact on thermal generation.
- The expected long-term cost of power will spread these thermal costs to future ratepayers.

69. The Board rejects YEC's position on the issue of long-term cost of power, as YEC's expected long-term cost of power is redundant to what accrual accounting and depreciation studies already accomplish. Depreciation accounting spreads the costs of long-term assets across the life of the asset. Further, the Board agrees that a delay in price signals and YEC's expected long-term cost of power does not incent or influence ratepayer behaviour when thermal generation costs continue to accumulate. It is the Board's view that customers are more likely to adjust consumption in response to price signals that are more closely linked to their period of energy usage.

[68] Appendix A to Board Order 2018-10, paragraph 77.

70. YEC provided further argument on rate smoothing compared to short-term pricing related to water availability. Specifically, YEC submitted that utilities continue to use long-term water availability when developing forecast revenue requirements for rate setting purposes. YEC noted that the CW supports the use of LTA in the determination of the base of the LWRF as it would appear that the short-term average would cause unwanted fluctuations in rates.

71. YEC also referenced its response to YUB-YEC-2-13 (YEC Round 2 Consolidated IR Responses) where it stated:

- Rate design criteria are inherently competing, notably "economic and price signals" (i.e. economic efficiency) versus "rate stability and predictability";
- Diesel cost variances due to water availability are a ratepayer risk; if economic efficiency criteria principles had been favoured over water flow variation, a DCF would not be adopted;
- The severe drought example included in the response supports YEC's rate stabilization measures;
- In reviewing 35 years of water history and using a system load of approximately 420 GWh/yr load, over 50% of the years would be considered high water years; about 20% of the years would be considered low water years; and the residual implication is that less than 30% of the years would be considered average water years.

72. However, from the technical session of October 8, 2019, the YEC slide presentation included Slide 7, "What is Long-Term Average?", which provided a graph depicting "DCF Funding" compared to "Actual Diesel Fuel". It noted that, with the exception of the drought years (years 25-28), diesel fuel costs appear relatively stable.

73. Based on the information provided in IRs and the technical session, with the exception of a drought condition, which appears to occur once in a 35-year period,[69] actual diesel costs appear to be stable over 70% of the time. The Board does not agree with the weight YEC gives to the rate design criteria of rate stability and predictability rather than ascribing greater weight to economic considerations, cross-subsidization and price signal principles.

74. The Board also has concerns with YEC's continued reliance on rate smoothing as a primary reason for continuation in support of the structure of the LWRF. For example, in YUB-YEC-2-13, YEC also stated:

> In summary, the DCF allows the Board to set rates that display rather than mask the expected long-term cost of thermal generation based on current thermal fuel prices, grid renewable generation capability, and forecast grid loads. The ability to provide such price signals is particularly timely and important today when LTA thermal generation requirements are notably growing (due to thermal generation once again being relevant for supply of GRA forecast loads, and with growth in grid loads with the upcoming Victoria Gold mine connection) at a time when high water conditions would otherwise mask the underlying change that is taking place.[70]

[69] A drought may occur once in a 35-year period, but when it occurs, it may exist for a period of several years.
[70] YUB-YEC-2-13, pages 4-5.

75. YEC has stated:

> A LTA forecast aims to establish a consistent long-term average (i.e. applicable over the hydro asset lives) for application in the two test years based on historic water records, current hydro system facilities and capabilities, and forecast grid loads for the test years. The LTA forecast does not attempt to forecast actual hydro and diesel generation that will occur in these test years based on forecast water conditions specific to these two years, and its "accuracy" cannot therefore be assessed based on the actual water conditions that occur during these two years. The LTA forecast is adopted to provide smoothing of revenue requirement impacts over varying short-term annual water conditions – and its "accuracy" needs to be assessed relative to its objective.[71]

76. YEC's summary is inconsistent with Board Order 2013-01 wherein the Board rejected YEC's proposed DCF. In that decision, the Board stated:

> The Board is concerned that the DCF masks market signals and that, in times of a drought, consumers will be removed from the signal to reduce consumption. The problem with smoothing rates is that it mutes market signals and hence consumer behavior.
>
> In addition, the Board notes that the use of the fund in the past has been sporadic as evidenced by the fact that the fund has not been active since 1999. Such periods of infrequent use raise issues of intergenerational inequity in that a consumer contributing to a fund today may benefit another consumer several years later.[72]

77. The Board does not believe that LTA rate smoothing should be taken into consideration to the detriment of price signals and intergenerational inequity. In addition, it is the Board's view that the utility looks at the long-term when it makes its decision on long-term investments but that cost recovery under the GRA occurs in a shorter time horizon. In the Board's view, costs to be recovered from ratepayers need to be assessed in a shorter time horizon due to relevancy of price signals, intergenerational equity, and the greater forecasting accuracy in shorter time frames.

78. YEC's submissions noted the following Board findings from Board Order 2019-04, the first compliance filing decision:

> The risk of low water conditions, with respect to added costs for thermal generation, should be borne by the customers of the utility; the isolated nature of the Yukon, low water events can have ramifications on electricity prices that can require a mechanism to mitigate those effects; and the LWRF (or earlier DCF mechanism) is a fund for customers to smooth rate impacts for those occasions[73] when hydro generation is less than LTA or to build up the fund when hydro generation is greater than LTA are important considerations. However, the Board is of the view that these items are subordinate to the greater principles: (i) that in determining the revenue requirements for these and future test years, the Board is focusing on the reasonableness of the forecasts and forecasting accuracy: (ii) the utility bears the risk of revenue requirement items varying from approved forecasts, and: (iii) costs due to variances from forecast thermal generation fuel volumes should be assigned to the utility when those costs are due to variances from

[71] YEC Final Argument, 2017-18 GRA, August 9, 2018, page 59.
[72] Appendix A to Board Order 2013-01, paragraph 254.
[73] Appendix A to Board Order 2018-10, paragraphs 318-320; and Appendix A to Board Order 2015-01, page 14.

> forecast load or maintenance requirements. To not recognize these principles and accept the YEC position creates an asymmetrical risk profile and unfair burden to customers.[74]

79. YEC has further argued that its LWRF principles are consistent with past practice in Yukon and with regulation of other hydro utilities across Canada and that any option to simplify the LWRF must still continue to meet the principles and specified objectives for the LWRF. The Board believes that YEC's position ignores the Board's previous views summarized in Board Order 2019-04. The Board has previously stated that the primary and fundamental principle the Board seeks in forecasts from an applicant in determining the revenue requirements for these and future test years is the reasonableness of the forecasts and forecasting accuracy. The Board is not convinced by YEC's position that the criteria for its long-term investment decisions must match the short-term criteria of a GRA. The Board believes that the long-term economic cost of power to determine its thermal fuel costs complicates this issue and that the long-term cost of power should not be used in determining thermal fuel costs. YEC is directed to address this issue in its next GRA.

3.3.3.3 Drought conditions

80. With respect to the impact of drought conditions, the Board asked YEC about the risks faced by YEC due to changes in load due to drought conditions.[75] YEC responded:

> YEC has no estimate of added revenues associated with the hypothetical added load of 35.80 GWh for that scenario because there is no basis for assuming which customer classes will generate the additional load. Based on 2018 actual results (see AEY-YEC-1-1) compared to GRA forecast, over half of the sales increase would be wholesales and most of the balance would be industrial sales.[76]

81. The Board considers that YEC did not provide a complete response to the information request. However, YEC did provide a general response regarding increased generation maintenance costs, but it failed to identify those costs that do not change with the increase in load. Without a balanced response, the Board cannot accept YEC's assertions regarding the impact of drought conditions.

82. Despite the Board's findings on the long-term cost of power in an earlier section of this decision, the Board agrees with YEC that droughts are a serious, material and recurrent issue for YEC and ratepayers. The Board accepts the evidence of YEC that, when a drought occurs, the subsequent rates can have drastic economic consequences for consumers. The Board agrees with YEC that the occurrence of a drought is not the time to mitigate rate shock and that is why the LWRF is required. The Board acknowledges YEC's position that, at the time of a severe drought, YEC not only would utilize available resources to mitigate any rate shock, it would be looking for all other possible solutions from government or temporary increases in rates to cover the costs of a severe drought. YEC's management of severe drought conditions should consider rate mitigation and intergenerational equity in the design of the LWRF.

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74 Appendix A to Board Order 2019-04, pages 7-9.

75 YUB-YEC-1-13, PDF page 105.

76 YUB-YEC-1-13, PDF page 105

3.3.3.4 Modelling

83. The Board agrees with UCG and CW that YEC's LTA forecasts currently do not reflect the impact of climate change, and in the Board's view, the impact of climate change should be included in YEC's hydro generation forecasts to ensure that the forecasts are accurate. Therefore, the Board directs YEC to provide in its next GRA a proposal to explain how it will consider the impact of climate change on hydro generation forecasts in its future GRAs.

84. The Board agrees that the modelling used in the LWRF has not been simplified. YEC stated that it attempted to simplify the model by introducing a fixed change factor. However, in YEC's submission, the fixed change factor is not as accurate as the LWRF term sheet. The Board has directed the fixed change factor to be removed from the LWRF term sheet earlier in this decision.[77]

85. The Board agrees with AEY's position that YEC's model cannot be either proven or disproven. This accords the Board's concerns regarding the verifiability and the ability to accurately test the model. Further, if the long-term economic cost of power is not used in determining thermal fuel costs, this should simplify future testing of the LWRF.

3.3.3.5 Board Order 2019-04 (rate mitigation and related issues)

86. In Board Order 2019-04, the Board found that:

> The Board considers it necessary to preserve the principle that costs should be assigned to the utility when total load varies from forecast. YEC's proposal in the compliance filing is creating an asymmetrical risk profile whereby YEC is imposing certain risks– e.g. incremental generation costs to customers –and yet there is no offsetting of potential benefits that YEC would gain, and those benefits would not be shared with customers– e.g. incremental sales and amortization of costs over greater sales volumes. Therefore, the Board considers that the incremental generation due to incremental load must be removed from the LWRF calculations because this is a risk borne by the utility. This adjustment is required in order for the LWRF to reflect Board Direction 29 in Board Order 2018-10.[78]

87. YEC raised various concerns with the above paragraph and other findings in Board Order 2019-04. No review and variance request was filed on Board Order 2019-04. YEC stated that the Board's direction will change the LWRF whereby AEY will recover all of its thermal generation costs and will discriminate against YEC relative to AEY.

88. Yukon Energy had several concerns with the direction to limit LWRF determinations only to the forecast load, including the resulting difference in treatment of YEC and AEY as regards ratepayers cost impacts for water availability risks related to any changes from the forecast load. Its comments were:

- The October 8, 2019, Technical Session outlines how compliance with this Board direction will result in a fundamental change in the principle that water availability is a ratepayer risk. More specifically, water variance thermal cost risk for load changes would now be borne by YEC.

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77 See paragraph 52 of this Appendix.

78 Appendix A to Board Order 2019-04, pages 9-10.

- There is no acceptable method available to use the model or other models to estimate directly (without reference to actual load results for the year) the "actual thermal generation" that would have occurred for the forecast load under actual water conditions.[79]
- There is no reasonable basis consistent with normal regulatory principles to revise the LWRF to separate water-availability related thermal cost for forecast load from actual load.
- The principle to be applied to water availability and fuel price change risks is that ratepayers bear thermal cost risks for water availability as well as fuel price change - and this principle for water availability as well as for fuel price change applies to all load supplied by the utility and not only to the GRA forecast load.[80]
- Changing the LWRF as directed in Board Order 2019-04 results in added complexity as well as inequitable outcomes between customers and YEC depending on whether actual loads exceed versus fall below forecast and whether water available exceeds or falls below LTA.[81] Further, it is also inequitable for YEC to be required to bear any water-related risks as regards load change volumes while AEY (through the ERA and its own deferral account) is allowed to pass all such risk back to ratepayers.

89. The Board finds the positions on the LWRF and discrimination to be problematic and that some of these statements are inconsistent with prior information submitted to the Board.

90. YEC has previously stated:

> Costs due to variances from forecast thermal generation fuel volumes should be assigned to the utility when due to total generation load forecast variance or thermal generation unit maintenance requirements, and to ratepayers when due to water or wind forecast variance or other specific factors for which the utility is unable to control and/or the regulator has established deferral or contingency fund cost accounts, e.g. DCF or RFID related thermal generation fuel costs.[82]

91. The above quotation shows that YEC has previously stated that it is responsible for thermal generation fuel variances when due to total generation load variances and that ratepayers are responsible when due to water or wind forecast variance or other specific factors for which the utility is unable to control and/or the regulator has established deferral or contingency fund cost accounts, e.g. DCF- or RFID-related thermal generation fuel costs.

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79 See response to YUB-YEC-1-4 and YUB-YEC-1-5.

80 See response to YUB-YEC-1-1, which notes: "Board Order 2019-04 states (at page 11 of Appendix A) that 'it was YEC's submission that the utility bore the risks with costs associated with incremental load'. On this specific matter, YEC's responses and submissions have consistently affirmed that cost impacts due to water and wind availability and fuel price risk are borne by ratepayers — and that this principle applies to actual loads supplied by the utility, i.e., costs due load change from GRA forecast that are to be allocated to the utility are based on GRA fuel prices and GRA hydro water conditions (e.g., LTA hydro generation for 2018)." See also YUB-YEC-2-1(g), (h), which notes: "Based on normal regulatory principles, none of the risks related to water variance are borne by the utility."

81 See October 8, 2019, Technical Session, YEC's Presentation - Background Notes, pages 15-18 for review of how impacts vary depending on load changes and water availability. See also YUB-YEC-1-12 and YUB-YEC-1-13.

82 YUB-YEC-2-1(d), from YEC's 2017-18 GRA proceeding, and referenced by YEC in YUB-YEC-1-1 in YEC's 2017-18 GRA First Compliance Filing.

92. The changes directed by the Board in Appendix A to Board Order 2019-04 provide the method to separate the changes due to load and the changes due to water. The Board direction was made based on information submitted in the GRA proceeding to which this second compliance filing relates. There is no evidence before the Board in this proceeding to support the assertion that there is an undue shifting of risk between YEC and AEY.

93. As for YEC's comments regarding discrimination versus AEY, AEY's deferral accounts are not a part of this proceeding. YEC may provide submissions on its position regarding AEY deferral accounts during a future AEY proceeding.

94. Further, the Board's view in Board Order 2019-04 is not a fundamental change in the principle that water availability is a ratepayer risk; it is a proper acknowledgement of the risks that are borne by the utility and the risk borne by the customer. If YEC wishes to provide further views on its risks and ratepayer risks, the appropriate forum for its submissions and evidence on this issue would be YEC's next GRA application.

95. Going forward, the Board provides the following summary on its findings in this decision and future directions for YEC regarding the LWRF:

a) For forecasting hydro generation for GRA purposes, the Board's focus in determining the revenue requirements for these and future test years will continue to be on the reasonableness of YEC's forecasts and forecasting accuracy.

b) The Board has previously approved the use of LTA by YEC to forecast its GRA hydro generation requirements. Consideration of future trends due to phenomenon such as climate change will be evaluated by the Board in subsequent proceedings when assessing the forecasting accuracy of hydro generation. This allows YEC the option to continue to use LTA for its hydro generation forecasts.

c) The approved LWRF will continue to cover variances due to deviations from forecast water levels up to forecast load levels. This is expected to reduce the risk to YEC of changes in hydro generation due to changes in water levels up to forecast load levels. As stated in Board Order 2019-04, this maintains the principle that ratepayers carry the risk for changes in water levels that was established when the LWRF was initially established (with the recognition that costs for generation for loads above forecast are a utility risk). YEC has stated that this should be trued up on an annual basis when there is not a GRA before the Board and as part of a GRA when there is such an application before the Board. Although this proposal is not optimal in that it does not result in an annual true-up, the Board accepts that this will provide a better price signal to customers than the previous LWRF submitted by YEC. As the LWRF will be for actual values compared to forecast values up to the load forecast, this should resolve the issues with respect to fuel mix ratios as the deferral account will reflect actual fuel mix.

d) The Board will not accept YEC's use of the expected long-term cost of power in its LWRF calculations. As stated, this is redundant to accrual and depreciation accounting and creates unnecessary complexities.

e) The Board will not accept YEC's thermal fuel calculations for the reasons cited earlier in the decision. In its future GRAs, YEC is directed to compare actual fuel costs (for up to forecast load) to forecast fuel costs for LWRF and GRA purposes.

f) YEC should consider the Board's comments in paragraphs 80 and 81. The Board recognizes that the directly focused LWRF above does not provide customer protection in years of drought. Therefore, the Board suggests that YEC examines whether a drought deferral account could be established to mitigate the effects of any future drought event(s). In its review of this issue, for example, YEC could consider the possibility of establishing a rate rider, on a cents/kWh basis, to build up the account and apply to the Board when it recognizes a drought situation and requires mitigation from this account.

g) The Board directs YEC to address intergenerational equity issues with respect to the LWRF in the next GRA.

4 Other matters

96. The UCG had the following general comments:

97. Regarding procedural process, the UCG submitted the following:

- Some of the processes used by the YUB are not consistently applied from application to application and are neither fair nor equitable to all stakeholders. The UCG gave the example that simultaneous final argument and reply argument is not used in all proceedings.
- There is a necessity for consistent methods in terms of what information is required for rate hearings. The UCG provided the example that, for YEC's 2017-18 GRA, the Board directed that actual results be utilized for the 2017 test year to determine final rates for that year; however, the Board did not compel YEC to provide actual 2018 results for the 2017-18 second compliance filing.
- Allowing utilities such as YEC to file applications halfway or later in a test year is not a standard approach for a public utility in other Canadian jurisdictions.
- YEC should be directed to address bill mitigation. YEC should develop and implement such a policy as part of its next GRA proceeding after consulting with other agencies and government to address the needs of low-income Yukoners.
- Through information obtained post-application, the UCG proposed that common sense and regulatory principles dictate that, when revenues increase from one sector of ratepayers, then all the other ratepayers should get a rate decrease since revenue requirements have already been set. The UCG added that a proper sharing of the benefits of industrial loads would help protect residential customers from this large rate increase represented in the proposed rate riders at the hardest time of the year for many ratepayers.

Views of the Board

98. With respect to the first issue of the opportunity of interveners to submit reply argument, the Board will establish the process schedule necessary to test the specific application before it. Under Section 52(e) of the *Public Utilities Act*, the Board may determine its own procedures. For example, the Board may or may not determine that simultaneous argument and reply argument are required to test an application, or the Board may determine whether oral argument or written argument may be presented.

99. The Board's processes do not need to be the same in every application as long as the process allows parties a sufficient opportunity to comment on the issues relevant to the application currently before the Board. The UCG had an opportunity to file its submissions on the application in argument and there is no indication that the UCG has been denied an opportunity to comment on the issues related to this second compliance filing application by the absence of simultaneous reply argument.

100. With respect to the last four UCG issues, the Board considers that these issues are out of scope and contain comments that are not necessary for the Board to address in the determination of YEC's second compliance filing to the 2017-18 GRA. The purpose of a compliance filing is for the Board to test compliance with previous directions. The comments of the UCG raised in argument are best addressed in a general rate application where the Board can fully test the merits of general rate issues or utility management issues that impact rates. Therefore, the issues raised in relation to consistent rates methodologies, billing impacts and allocations between different customer classes are more appropriately raised in GRA proceedings where these issues can be fully tested.

101. As a final comment, the Board considers that the UCG, as a sophisticated intervener participating in Board proceedings, has the knowledge and ability to test issues in specific rates proceedings, and further, procedural concerns should not be raised late in the process.