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November 21, 2022

Mr. Richard Buchan, Chair
Yukon Utilities Board
Box 31728
Whitehorse, Yukon Y1A 6L3

Dear Mr. Buchan:

Re: 2022 Q3 Low Water Reserve Fund ("LWRF") Report

The Low Water Reserve Fund ("LWRF") Term Sheet, as approved by Yukon Utilities Board ("YUB" or "the Board") Order 2022-07, requires Yukon Energy Corporation ("Yukon Energy" or "YEC") to file LWRF quarterly reports with the Board. Specifically, the LWRF Term Sheet states the following regarding the quarterly reports:

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

Accordingly, YEC is providing Q3 quarterly report regarding the LWRF calculations and LWRF balance updates with the following tables [tables are provided in Attachment 1]:

- **Table 1 –** LWRF Calculations for 2022 full year forecast based on preliminary actual results for January through September and forecasts for October through December.
- **Table 2 –** LWRF forecast balance to 2022 year-end based on 2022 forecast LWRF calculations.

In summary, Tables 1 and 2 indicate as follows regarding the forecast LWRF calculations and balance for 2022:

- Based on the forecast annual load for 2022, and the LWRF Term Sheet, the LTA thermal for 2022 is 73.577 GWh with 63.775 GWh LNG which is about 87% of LTA thermal generation (Table 1, L16b).[1]
- The forecast actual thermal generation requirement for 2022 at 39.123 GWh, including 9.802 GWh diesel and 29.321 GWh LNG (Table 1, L17).

[1] LNG is assumed to displace 90% of the expected long-term average thermal requirements, subject to not exceeding total thermal less estimated diesel at forecast load.

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- The resulting overall gap between LTA and actual thermal generation for the forecast 2022 load equals -34.454 GWh (Table 1, L18), all LNG.[2] The resulting payment required to LWRF from YEC for 2022 forecast to be $6.249 million (Table 1, L19).[3]
- LWRF balances [Table 2]:
    - 2022 opening balance of $2.744 million [as filed with the Board on July 29, 2022].
    - Estimated YEC transfers to LWRF at $6.249 million [as per Table 1].
    - Add estimated interest charged to the balance at $0.169 million.
    - Estimated closing balance on December 31, 2022 at $9.161 million.

The Board in its Order 2022-03 approved the change in the LWRF balance cap from +/- $8 million to +/- $16 million. Board Order 2019-02 set Rider E to 0.00 cents/kW.h effective April 1, 2019. The forecast LWRF balance is expected to continue to be within +/- $16 million, and no Rider E calculation is required based on 2022 forecasts.

If you have any questions regarding the above please contact the undersigned.

Yours truly,

E Mollard

Ed Mollard
Vice President, Finance and
Chief Financial Officer

[2] On long-term basis LNG is assumed to displace 90% and diesel 10% of the expected long-term average thermal requirements, subject to not exceeding total thermal less estimated diesel at forecast load.
[3] Based on 2021 GRA average fuel costs at $0.1814 per kW.h for LNG and $0.2051 per kW.h for diesel as approved by YUB in Order 2022-03.

2022 Q3 LWRF Report Attachment 1

Table 1: Forecast LWRF Calculations

Line No		2022 Forecast [Q3 Report]		Notes
L1a	Diesel Fuel Cost per kW.h	20.507	cents/kW.h	2021 GRA Average Fuel cost
L1b	LNG Fuel Cost per kW.h	18.136	cents/kW.h	
L1c	GRA YIS firm Load forecast	538,726	MW.h	
L1d	GRA LTA Thermal Generation forecast	85,930	MW.h	
Calculation of Thermal Cost to Charge (Refund) LWRF				
	Assumptions			
L2	YEC Grid load	527,466	MW.h	2022 Full-year forecast
L3	Fish Lake	9,663	MW.h	2022 Full-year forecast
L4=L2+L3	Total Grid load	537,129	MW.h	
	Assumed Actual Generation Sources			
L5	YECL Fish Lake	9,663	MW.h	2022 Full-year forecast
L6	YEC Hydro	485,773	MW.h	2022 Full-year forecast
L7	YEC Thermal	39,612	MW.h	2022 Full-year forecast
	Diesel	10,066	MW.h	2022 Full-year forecast
	LNG	29,547	MW.h	2022 Full-year forecast
L7a	*YEC Diesel/LNG charged to capital, RFID and maintenan*	489	MW.h	2022 Full-year forecast
L7a1	*Diesel*	263	MW.h	2022 Full-year forecast
L7a2	*LNG*	226	MW.h	2022 Full-year forecast
L7b=L7-L7a	*YEC Net Diesel/LNG*	39,123	MW.h	2022 Full-year forecast
L7b1	*Diesel*	9,802	MW.h	2022 Full-year forecast
L7b2	*LNG*	29,321	MW.h	2022 Full-year forecast
L7b3=L7b1/L7b	*Diesel % of total net thermal*	*25%*		
L8	IPPs	2,080	MW.h	2022 Full-year forecast
L9	Total Grid load	537,129	MW.h	
	LTA Expected Generation Sources			
L10	AEY Fish Lake (expected)	8,730	MW.h	Expected based on LTA
L11	IPPs	2,080	MW.h	Expected at actual level
L12=L9-L10-L11	YEC Grid load net of expected Fish Lake and IPP	526,319	MW.h	
L13=L12-L1c+L11	Load Variance	-10,327	MW.h	
L14	LTA Thermal Generation at Actual Load	73,577	MW.h	Estimated based on LTA Thermal Calculation Table [please see below]
L15=L7b/L14	Actual Thermal Generation as % of LTA Thermal Generation	53%		
L16=L14	Expected YEC Thermal Generation in Rates	73,577	MW.h	
L16a	Diesel	*9,802*	MW.h	Total thermal less LNG below.
L16b	LNG	*63,775*	MW.h	90% of total thermal, subject to not exceeding total thermal less estimated diesel or actual diesel
L17=L7b	YEC Net Thermal Generation	39,123	MW.h	
L17a=L7b1	Diesel	*9,802*	MW.h	
L17b=L7b2	LNG	*29,321*	MW.h	
L18=L17-L16	YEC Thermal Generation to be included in LWRF	- 34,454	MW.h	
L18a=L17a-L16a	YEC Diesel Generation to be included in LWRF	-	MW.h	
L18b=L17b-L16b	YEC LNG Generation to be included in LWRF	- 34,454	MW.h	
L19=L1axL18a+L1bxL18b	Incremental YEC Thermal Generation Cost to Charge (Refund) LWRF ($000s)	($6,249)		

LTA Thermal Calculations for 2022 for Line 14 in Table 1

1	YEC Grid load net of expected Fish Lake and IPPs [Table 1, L12]	526,319
2	2021 WH2 and WH4 Uprates [2021 GRA, App 2.1, Table 2.1-1 note #7]	7,100
3=1-2	Load net of WH2 and WH4 Uprates	519,219
4=3 Rounded to Nearest Ten	Rounding to Nearest Ten	515,000
5	Expected LTA Thermal at Rounded Load [2021 GRA, App 2.1, Table 2.1-1]	70,287
6=3-4	Load above Rounded Load	4,219
7	LTA Thermal as % of Incremental Load [2021 GRA, App 2.1, Table 2.1-1]	78%
*8=6*7*	LTA Thermal above the Rounded Load	3,291
9=5+8	LTA Thermal Generation at Total Load	73,577

2022 Q3 LWRF Report Attachment 1

Table 2: Forecast LWRF Continuity Schedule

Line	Activity	2022 Forecast ($000s)
A	**Opening Balance[1]**	**$2,744**
B	Incremental Diesel Generation Cost to Charge/(Refund)[2] to LWRF	($6,249)
C=B	Total LWRF operation for YEC	
	YEC pays to LWRF	$6,249
	YEC withdraws from LWRF	$0
D=A+C	**LWRF Balance after Annual Operation**	**$8,992**
E	**Interest on LWRF Balance[3]**	**$169**
F=D+E	**LWRF Balance after Interest charge**	**$9,161**
G	**Rider E (Rebate)/Collections [January - December]**	**$0**
H=F+G	**LWRF Ending Balance**	**$9,161**
I	**LWRF Cap [4]**	**`+/-16000**
J	**LWRF Rebate/(Collections) Required**	**$0**

Notes:

1. Opening Balance is based on Table 1-2 of July 29, 2022 Annual Filings for 2021 and reflects 2021 Ending Balance.
2. Based on calculations in Table 1.
3. Per the March 11, 1996 letter recording the settlements [provided as Exhibit B-16 in the 2008/2009 GRA] the DCF fund is to attract interest based upon the short/intermediate term bond rates in which the Companies may invest the fund and any negative balances would only attract interest at the lowest short-term borrowing rate available to the Companies through a line of credit.
4. LWRF cap was increased to +/- $16 million as per YUB Order 2022-03.