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October 10, 2017

Mr. Robert Laking, Chair
Yukon Utilities Board
Box 31728
Whitehorse, Yukon Y1A 6L3

Dear Mr. Laking:

Re: Utilities Consumers Group (UCG) Motion and John Maissan (JM) Motion re: Yukon Energy Corporation (YEC) Responses to Information Requests

In correspondence dated September 28, 2017, UCG made application for further information from Yukon Energy arguing that the information provided in 18 responses filed September 22, 2017 was not fully responsive; and on October 3, 2017 JM also filed correspondence requesting more complete responses from YEC for seven interrogatory responses.

The Yukon Utilities Board ("YUB" or "Board") by letter dated October 4, 2017 invited Yukon Energy to provide comments by October 10, 2017 and provided UCG and JM with the opportunity to respond to any comments by October 13, 2017.

Yukon Energy's response to the requests for further information by UCG and JM is provided below.

1. Yukon Energy Response to UCG Requests for Further Information

In general, UCG asserts that "it is apparent that appropriate and adequate responses" have not been provided and that "UCG is concerned with the lack of business case analysis provided for many of YEC's capital projects which continue to be a significant rate driver." UCG asserts that "in order to complete a robust analysis of YEC's proposed revenue requirement, it is necessary to have the requested information and detailed calculations that underpin YEC's Application", and that “given the YUB’s previous direction to ensure full business case analysis is provided for all major projects, YEC must be held accountable to provide the required detailed information”.

In response, Yukon Energy notes that it has provided the business case analysis and information as required by the Board for all of its capital projects that relate to the current GRA application and requested revenue requirements for the 2017 and 2018 test years. The requests for added information in UCG’s motion relating to 18 different IR responses are, in general, unreasonably imprecise and extensive, constituting fishing expeditions rather than requests for information reasonably required to assess the prudence of these actual or forecast capital expenditures.

Yukon Energy reviews below each of the specific 18 IR responses where UCG is requesting further information. Where possible, and relevant, Yukon Energy has attempted to clarify its responses, including elaborating on instances where requested additional information is not available, not practical to provide, beyond what was originally requested, or where the request is simply too imprecise or extensive.

(a) UCG-YEC-1-4(a)

UCG asserts that “YEC failed to provide the requested specific details” regarding the actual impact of the following on YEC’s test year revenue requirement:

- The Mayo Promissory Note’s flexible debt financing provisions;
- YDC contributions that reduced project costs to be recovered from ratepayers;
- Adjusted thermal fuel costs related to Diesel Contingency Fund operation; and
- The implementation of the Whitehorse Diesel-Natural Gas Conversion Project has had on YEC’s revenue requirement for 2017 and 2018.

YEC Response

The information request was to provide specific details regarding the actual impact that each of the noted items has had on the revenue requirement for each of the test years. Yukon Energy submits that “specific details” on the actual impact of each of these items to the revenue requirement were provided in the responses referenced by Yukon Energy [i.e., JM-YEC-1-23(a), YUB-YEC-5(a), and UCG-YEC-1-23(a-e]. UCG’s request is essentially a follow up question for each referenced response seeking further information not specifically sought in the original UCG information request (e.g., regarding how each item was calculated, and which components of the revenue requirement were impacted), and as such should be denied by the Board.

Details are addressed below with regard to the responses referenced by Yukon Energy:

- With regard to **JM-YEC-1-23(a)** – This response provided the following details regarding the actual impact of YDC and government contributions that are referenced in the UCG IR (i.e., all of the contributions referenced in YEC's GRA that are relevant to this GRA), including impacts regarding refinancing the YDC debt, the Mayo B Promissory note, the $22.4 million YDC contribution and the $128.5 million in contributions towards Carmacks-Stewart Transmission Project Stage 2, Mayo B and Aishihik Third Turbine Project:

    - Refinancing YDC long-term debt in 2015 reduces interest payments in 2017 and 2018 by $1.5 million and $1.4 million respectively.

    - The Mayo B Promissory note "Reduces interest payments in 2017 and 2018 by approximately $0.7 million and $0.6 million respectively". The response notes that this is calculated based on the maximum face interest of 5.46% and the interest expense based on load forecast for 2017 and 2018. Contrary to UCG's assertions, this information indicates the actual impact of the Mayo B Promissory Note's flexible debt refinancing provisions on 2017 and 2018 revenue requirements.

    - The $18.3 million YDC contribution to the LNG plant "is about $1.3 million reduction in revenue requirement for each 2017 and 2018 test years. This reduction will be longer term compared to deferred cost impacts." Yukon Energy is not aware of what added information could be provided regarding the impact of this contribution.

    - The impact of remaining $4.2 million [of the $22.4 million YDC contribution] "is about $0.7 million reduction in revenue requirement for each 2017 and 2018 test years".

    - The ongoing impact related to the $128.5 million in contributions towards the CSTP Stage 2, Mayo B and Aishihik Third Turbine projects is estimated at about $7.6 million/year reduction in revenue requirement (depreciation and return on rate base).

- With regard to **YUB-YEC-1-5(a)** – This response provided summarizes the changes in thermal fuel costs for each test year related to DCF operation (i.e., fuel costs at long-term average hydro generation for the forecast grid loads in each test year); and the changes from 2016 regarding expected thermal generation and average thermal fuel price for each test year. This information enables reviewers to assess the relative contribution of load changes and average fuel price changes. UCG in its motion is essentially asking a follow up question requesting additional detail on how the lower LNG cost and higher LNG share of expected generation can be tied to a comprehensive analysis of the impact of the implementation of the Whitehorse Diesel-Natural Gas Conversion Project. Yukon Energy provided the information that was originally requested regarding the impact on test year revenue requirements from "adjusted thermal fuel costs related to Diesel Contingency Fund operation".

- With regard to **UCG-YEC-1-23(a-e) –** This response, which includes reference to JM-YEC-1-27, provides in detail the information requested on costs incurred for implementation of the Whitehorse Diesel-Natural Gas Conversion Project ("LNG Project") and the impact that these costs had on test year revenue requirements. The referenced information indicates that capital and fuel costs included in the GRA for the LNG Project result in reductions to revenue requirement of approximately $1.8 million in each test year relative to the option of new diesel generation to provide the required dependable grid capacity. The response also breaks out cost impacts related to capital and fuel, indicating that the added annual costs for depreciation and return that are included in this GRA for this new capital asset approximate $1.7 million in each test year. In summary, Yukon Energy provided the information that was originally requested regarding the impact that "implementation of the Whitehorse Diesel-Natural Gas Conversion Project has had on YEC's revenue requirements for 2017 and 2018".

(b) UCG-YEC-1-5 (b-p)

UCG notes that it requested a comparison of various revenue requirement components between YUB-approved and actual costs 2012 through 2016 including percentage changes. UCG goes on to note that "while YEC provided YUB-approved numbers for 2012 and 2013, they have not provided a comparison to what was assumed to have been approved by the YUB for 2014 through 2016". UCG states that "the intent of this request was to compare actual costs incurred to YUB-approved budgets", and requests that "YEC provide the requested response to UCG-YEC-1-5 parts (b) through (p) such that actual costs incurred in 2014 through 2016 are compared to the 2013 approved revenue requirement components".

YEC Response

Generally, the information request for each sub-part of UCG-YEC-1-5 was to provide for each of the tables included in Tab 3 of the Application [Tables 3-1 through 3-15], the "YUB approved costs" and actuals for 2012, 2013, 2014, 2015 and 2016. Each question from part (b) to part (p) also requested that YEC "identify percentage changes from column to column."

Contrary to UCG's assertions, there are not in fact any YUB-approved budgets for 2014 through 2016. During this period, YEC continued to use the YUB-approved rates as determined based on the 2013 approved revenue requirements.

Yukon Energy provided what was requested, i.e., the GRA compliance costs for 2012 and 2013, along with the actuals for those years; the actuals for 2014 through 2016; the percentage change from column to column, including the percentage change between the 2012 compliance filing and 2012 Actual and 2013 compliance filing and 2013 actual along with the annual percentage change each year thereafter.

In summary, Yukon Energy provided the information as originally requested, and the request for additional information should therefore be denied.

Yukon Energy also notes that UCG is able to use the information provided in the response to assess the new percentage changes that it now seeks to assess, i.e., percent changes in 2014 through 2016 compared to the 2013 approved revenue requirement components.

(c) UCG-YEC-1-13(e)

UCG notes that "YEC was asked to provide supporting documentation for the $962,000 in legal costs incurred by YEC for the appeal process including the timing of when these costs have been incurred" and asserts that "all YEC has done is provide a list of what is assumed to be amounts (in millions of dollars) of costs incurred in various years." UCG notes that "when supporting documentation is requested, UCG assumes that the utility would understand that this is a request for copies of invoices that spell out when the work was undertaken, what work was completed and at what rate of fee," and requests that YEC provide the requested supporting documentation.

YEC Response

The response to UCG-YEC-1-13(e) provides added information as requested for fees paid to legal counsel by year from 2012 through 2016. YEC notes that the matter is still ongoing and is not being included in the applied for revenue requirement or rates at this time.

UCG's new request for "supporting documentation" defined as "copies of invoices" is subject to legal privilege and cannot be provided.

(d) Responses requesting additional business case information [UCG-YEC-1-14, UCG-YEC-1-15, UCG-YEC-1-16, UCG-YEC-1-17, UCG-YEC-1-18, UCG-YEC-1-19, UCG-YEC-1-20, UCG-YEC-1-21 and UCG-YEC-1-22 and UCG-YEC-1-24]

For each of these 10 referenced IR responses, UCG requests that YEC provide the "requested business case analysis" as per part (a) of the IR and "the detail requested" in the IR, and provides the following to support this request:

- UCG asserts that "YEC has not responded to the request [in part (a) of the IR]…to provide the business case analysis related to … [each of 10 specific capital projects referenced]".

- UCG cites a direction provided in Order 2009-8, page 37 where the Board directed YEC to provide certain business case information in future GRA applications to support major capital items.
- UCG implies (without specifics) that YEC has ignored the YUB's directions, has not provided the information as directed by the Board, "is obligated to provide the requested level of information," "should have prepared the full business case analysis while it was preparing the GRA application", and "it is not up to the utility to determine whether the requested information [presumably referencing UCG's specific requested information] has any relevance to the current review process."

YEC Response

UCG's requests in the motion related to each of these 10 IRs do not specify what additional information is now requested with regard to each IR.

On the general UCG assertion relating to part (a) of each referenced IR, that YEC has not provided business cases for each project as directed by the Board, Yukon Energy response is that UCG's submission is without merit and should be denied by the Board in so far as it relates to UCG's current motion relating to these 10 IR responses. Yukon Energy's Application and response to IRs provides for review on the record of this proceeding all of the relevant information needed to determine the prudence of costs incurred for each project. UCG's motion provides no specific basis for any of the referenced IR responses to support UCG's assertions that Yukon Energy has not responded to the Board's requirements related to business case information.

For several of these 10 referenced IRs, Yukon Energy provided specific added information as requested by UCG, e.g., specific reports or studies as requested.

Although not addressed directly in the motion, Yukon Energy notes that for each of these referenced IRs UCG in effect is seeking in this motion to secure certain detailed information that Yukon Energy did not provide relating to annual cost breakdowns by project component that UCG requested "from conception to completion", as well as "a chronological history" of all decisions, approvals, consultations including Board of Director's decisions, and "all meetings with First Nation governments / representatives, stakeholder meetings, etc." The Board should deny UCG requests for this information as these matters are unreasonably imprecise and extensive, constituting fishing expeditions rather than requests for information reasonably required to assess the prudence of these actual or forecast capital expenditures. In the absence of a more targeted line of inquiry, the response to these questions will necessitate large amounts of work to compile with low probability that the information gathered will affect the prudency assessment.

Based on all of the above considerations, the Board should deny the motion with regard to these 10 specified IR responses.

(e) UCG-YEC-1-23 (a) and (e)

UCG notes that YEC has not provided the following information:

- Under part (a) of this IR, YEC has not provided "details on all YEC internal costs (labour, O&M, supplies, etc.) attributable to the LNG Plant project", and has not provided "the requested breakdown of costs including consultant names and tender amounts for engineering, management, planning, permitting, demolition and other activities".

- Under part (e) of this IR, YEC has "refused to provide any of the detail requested regarding meetings with various First Nation governments and stakeholders which UCG has requested in order to understand the issues / concerns that were raised and how (if at all) YEC changes the scope of the project and costs incurred in order to address these issues."

UCG's motion requests that YEC now provide this information.

YEC Response

The Board should deny UCG request for this information as these matters are unreasonably imprecise and extensive, constituting fishing expeditions rather than requests for information reasonably required to assess the prudence of these actual or forecast capital expenditures. In the absence of a more targeted line of inquiry, the response to these questions will necessitate large amounts of work to compile with low probability that the information gathered will affect the prudency assessment.

In response to the UCG request pertaining to part (a) of the IR, all information reasonably relevant and required relating to LNG Plant project costs has been provided on the record of this proceeding and that the UCG motion on this matter should be denied. YEC internal costs related to capital costs have been provided (under Owner's Costs); it is not feasible to break out other ongoing O&M "internal" costs for this specific project (versus all other O&M at the Whitehorse thermal plant). The Part 3 proceeding provided names and tender amounts, and the Application reviews material construction contract cost changes from the Part 3 hearing.

In response to the UCG request pertaining to part (e) of the IR, the Board should deny UCG requests for this information. UCG's original request was for "a chronological history of all the decisions / approvals / consultations related to this project including Board of Director's decisions, all meetings with First Nation governments / representatives, stakeholder meetings, etc." Yukon Energy responds that these matters are unreasonably imprecise and extensive, constituting fishing expeditions rather than requests for information reasonably required to assess the prudence of these actual or forecast capital expenditures. In the absence of a more targeted line of inquiry, the response to these questions will necessitate large amounts of work to compile with low probability that the information gathered will affect the prudency assessment. UCG's motion reference only to First Nation elements does not change Yukon Energy's response on this matter.

(f) UCG-YEC-1-25 (b)

UCG states that Yukon Energy, in response to part (b) of this IR, has not provided a table of capital projects that have been undertaken since 2013 that have been required to meet system growth, including descriptions of projects, justifications for the projects due to system growth, total actual / estimated costs and dates of completion. UCG asserts that YEC's reference to evidence in the Application does not provide a comprehensive and easily understood table of the requested information, and requests that YEC provide the requested table.

YEC Response

Yukon Energy's response to part (b) referenced the projects classified in Tab 5 undertaken since 2013 to meet capacity shortfalls, noting that these projects were undertaken "primarily due to retirements of existing thermal units (rather than due to system growth)."

UCG's motion in effect seeks to modify the original IR, which in part (a) referenced a specific quote in the Application, which incorrectly talked of "the unprecedented level of growth" on the system as a justification for some of the capital projects. As noted in YEC's response to part (a), this sentence in the Application was incorrect and needed to be amended to delete reference to growth.

The Application overall indicates no material firm load growth on the grid since 2013, and no capital projects have been specifically identified in the Application as being implemented to meet system load growth as such. Accordingly, there are no projects that YEC could provide to include in the table as requested by UCG under part (b), and the Board therefore should deny the motion relating to this IR.

(g) Responses requesting information [UCG-YEC-1-34 (a-c); UCG-YEC-1-35 (a-b); and UCG-YEC-1-36(a)]

UCG's motion pertaining to the Gladstone, Marsh Lake and Mayo Lake deferred cost projects requests information as follows:

- Under part (a) of each of the three IRs, UCG seeks "a detailed chronological list of costs incurred" and "decision points" related to the project, "including a breakdown of the costs incurred for feasibility studies, engineering, internal and external labour costs and tenders awarded related to this project" with a specific request to identify all attributable YEC internal costs (labour, O&M, supplies, etc.). The motion seeks this information for the first two referenced IRs but not for UCG-YEC-1-36.

- Under part (b) of each of the three IRs, UCG seeks "a chronological history of all the decisions / approvals / consultations related to this project including Board of Director's decisions, all meetings with various First Nation governments / representatives, stakeholder meetings, etc."

- Under part (c) of UCG-YEC-1-34, UCG seeks "meeting notes and correspondence related to discussions with Champagne and Aishihik First Nations and Kluane First Nation".

YEC Response

Yukon Energy's Application and response to IRs provides for review on the record of this proceeding all of the relevant information needed to determine the prudence of costs incurred for each project. For each of the three IR responses referenced above in UCG's motion, Yukon Energy provided for the relevant deferred cost project cited in the IR references to relevant information for determining the prudence of costs as provided in the Application and in IR responses in this proceeding.

This motion is seeking to secure certain detailed added information for each of these IRs that Yukon Energy did not provide relating to "a detailed chronological list of costs incurred" and "decision points" related to the project (with various specific cost details noted) [this request applies to two of the IRs] and "a chronological history" of all decisions, approvals, consultations including Board of Director's decisions, and "all meetings with various First Nation governments / representatives, stakeholder meetings, etc." This latter request is further expanded for the Gladstone project IR. The Board should deny UCG requests for this information as these matters are unreasonably imprecise and extensive, constituting fishing expeditions rather than requests for information reasonably required to assess the prudence of these actual or forecast deferred cost expenditures. In the absence of a more targeted line of inquiry, the response to these questions will necessitate large amounts of work to compile with low probability that the information gathered will affect the prudency assessment.

Yukon Energy also notes that detailed information as referenced for the Gladstone project was reviewed by the Board in the 2012/13 GRA (i.e., limited new spending on this project has occurred since that proceeding), and the Marsh Lake and Mayo Lake projects continue to remain in WIP through 2018 and do not affect revenue requirements as forecast in this GRA during the test years.

Based on all of the above considerations, the Board should deny the motion with regard to these three specified IR responses.

2. Response to JM Requests for Further Information

JM requests "more complete answers" from Yukon Energy on seven specific IRs. In many instances, the referenced issues relate to understandings regarding either the IR as asked or the response as provided. In other instances, JM is seeking added information and/or information that Yukon Energy does not currently have and cannot usefully provide without new studies.

Yukon Energy reviews below the specific issues related to each of the referenced IRs.

(a) JM-YEC-1-5(e)

JM states that the question has not been answered, that Senior Yukon Energy officials were quoted as saying that there was an adequate supply of power available from the grid to supply Victoria Gold, and that "it is appropriate for Yukon Energy to explain to the YUB and all parties what that means in terms of energy and capacity".

Yukon Energy Response

JM's original IR asked, "Please provide Yukon Energy's official position on grid power – energy and capacity – available for Victoria Gold."

The response to JM-YEC-1-5 (by its reference to forecast loads and timing) confirmed that there is adequate grid capacity and energy to supply the forecast Victoria Gold loads. As noted in JM_YEC-1-6(c), updated information on Victoria Gold also indicates that the earliest potential date for start of operation for the Eagle Gold mine is now in 2019.

The response to JM-YEC-1-5, parts (c) to (g), provides the latest update regarding timing of Victoria Gold load and purchases [including both energy requirements and peak load] assumed for the first six years of operation. As noted in the response, Yukon Energy is currently in discussions with Victoria Gold Corp. regarding the required PPA. When the PPA is concluded, it will be filed with the Board for its review and approval. Information provided for review with the Board will include the necessary supporting assessments regarding potential impacts on YEC's operations, revenues and costs.

JM-YEC-1-30(c) and YCS-YEC-1-17 provide added information regarding the transmission line between Mayo and McQuesten and the potential source of the generation required.

Based on the above, the information available provides a reasonable response, and no additional information or clarification is required.

(b) JM-YEC-1-6(c)

JM notes that the response "indicates that [YEC has] misread the question" and that "there was no reference in the question to recent year spilled hydro energy."

JM asserts that part (a) of the response provides the LTA spilled hydro energy; and part (b) of the response provides the forecasted secondary sales, noting that "based on a YUB order [these] must be based on LTA hydro, which by definition must be surplus hydro". JM asserts that "part

(c) of the question is asking if the LTA surplus hydro is the sum of these two", and concludes that "unless I am missing something it should be so but a suitable answer is not provided".

Yukon Energy Response

Secondary sales and LTA spilled hydro energy as provided in response to parts (a) and (b) to JM-YEC-1-6 are not related.

JM's motion asserts that forecasted secondary sales are based on long-term average (LTA) hydro. This is incorrect. Secondary sales reflect actual hydro availability in any specific month and year, i.e., at current loads surplus hydro is expected to occur in most water years of record, and secondary sales are forecast under current water conditions in each month of 2017 and 2018.

To clarify the response, long-term average (LTA) surplus hydro available in 2017 and 2018 to supply future industrial customer (or other) new loads is not the sum of LTA "spilled hydro" as estimated in Table 1 of the response plus the forecasted secondary sales figures as shown in Table 2 of the response. Overall, these two variables are not related. As defined in the current GRA, LTA hydro that is available to supply new industrial or other loads is determined solely by use of the YECSIM model and based on assessments only of firm loads (i.e., excluding any secondary sales).

For information purposes, the response to part (a) was based on firm sales as YEC's LTA assessments do not include secondary sales.

(c) JM-YEC-1- 10(b) (v) and (vi)

JM notes "the answer provided is not relevant to [the referenced] parts" and "regardless of whether or not YEC intentionally provides spinning reserves when running hydro only, these two sub-questions can be answered" and "the answers are very relevant when discussing grid reliability and related matters".

Yukon Energy Response

Part (b) of this IR referenced "a series of 3 or 4 quite extensive grid outages" that occurred "around early August", and the two referenced parts under (b) asked for the following information for "each of these outages":

- The shortfall in generation as a result of the trip (load less operating generation including spinning reserve);
- The spinning reserve that would have been required to prevent an outage.

The response to JM-YEC-1-10(b) provided copies of YEC's System Disturbance Report for the following outages (with extensive detailed information on timing, duration, load conditions, generation loss, etc. for each event):

- August 3, 2017 (one outage - estimated load loss percentage of grid at 31%).
- August 8, 2017 (three separate outage reports - estimated load loss percentage of grid at 29%, 2.8% and 10%).
- August 9, 2017 (one outage report - estimated load loss percentage of grid at 25.91%).

In summary, Yukon Energy has provided the information that is available at this time on these outages. An assessment of spinning reserve required to prevent each outage has not been developed at this time, and would require future study to assess properly for meaningful review.

(d) JM-YEC-1-12(b)

JM notes that "a single sentence is an inadequate discussion" and that "Yukon Energy must have more detailed information on how fast diesel generators and LNG generators can pick up load based on the governors (governor alternatives or options?); how much faster one is than the other, etc."

Yukon Energy Response

Part (b) of the IR asked for the following: "Please provide the cold load pick up capability (i.e., after an outage) of diesel vs. LNG generators".

The following response was provided: "Compared to LNG engines, YEC diesel generators are more effective for cold load pickup due to faster responding governor which is able to recover frequency quicker."

Yukon Energy notes that the original IR did not focus on specific units, but implied that a cold load pick up capability could be provided for "diesel vs. LNG generators" in general. The motion recognizes that actual cold pick up for any generator (diesel or LNG) will vary depending on specific design features of each unit. The response reflects current LNG and diesel unit mix available at the Whitehorse thermal plant – and does not attempt to break out cold start pick up capability for each existing unit, e.g., existing Mirrlees diesel units will have a notably slower cold load pick up than many of the existing smaller diesel units at this plant. Cold load pick up capability will similarly vary among different potential LNG units that might in future be considered.

Yukon Energy does not currently have a detailed assessment of specific cold load pick up capability for each existing thermal generation unit at the Whitehorse plant than can usefully be provided to expand on the response provided. Future study would be required to provide a more detailed assessment.

(e) JM-YEC-1-21

JM notes “the question appears to have been misread, the question asked for the impact with Victoria Gold load added and did not ask to have the Minto mine excluded” and to “please answer accordingly”.

Yukon Energy Response

The IR asked how the DCF fund impacts of a $16 million cap option (vs the existing $8 million DCF cap) as reviewed in Appendix 3.4, page 3.4-12 would change with the addition of a Victoria Gold mine at 62 GW.h per year (year 1) to the grid. The assumed load for this mine reflected assumptions at the time the Application was prepared.

The response stated that the 450 GWh scenario examined in this section is a good proxy for the impact of the Victoria Gold mine “absent the Minto mine”. At the time that the Application was prepared, the Minto mine was not expected to continue beyond 2017, and Victoria Gold was not expected to be an industrial customer until 2020, i.e., the grid load forecast without Minto mine approximates 380 GW.h in the Appendix 3.4 assessment, and the 450 GW.h scenario as assessed in the Appendix in effect would reflect a new generation load of 70 GW.h/year, i.e., slightly more than might be expected with 62 GW.h sales to Victoria Gold plus system losses related to such sales.

In short, in Yukon Energy’s view the response reflected the conditions assumed in the Application and in the IR and no further analysis is reasonably required at this time.

Updated conditions for the Victoria Gold mine and the Minto mine (as well as Alexco mine) are currently being assessed by Yukon Energy, and will be provided to the Board and other parties at such time as a PPA application related to the Victoria Gold mine is provided for review and approval of the Board.

(f) JM-YEC-1-24(b)

JM notes “the answer provided did not address the question asked” and “we know that the approved depreciation rates is 72 years, the question was given that the original steel lasted substantially less than 72 years, how can Yukon Energy justify a 72 year depreciation on the replacement." JM notes "this is very relevant to intergenerational fairness."

Yukon Energy Response

The response provided notes that based on the nature of the asset, the project was classified as "Hydro Structures and Improvements" which has an approved depreciation rate of 72 years.

Yukon Energy notes that depreciation rates for each asset category are based on average lives [some components will last for longer periods and some will last for shorter periods].

Depreciation rates were reviewed by KMPG as part of the 2012/13 General Rate Application; and the noted depreciation rates for hydro structures and improvements were approved by the Board in Order 2013-01. The response therefore simply referenced the current depreciation rate as approved by the Board for this category of capital asset.

Yukon Energy cannot comment on the extent that the 1975 Aishihik assets had an actual life that would fall outside the range that might otherwise be expected for such assets.

(g) JM-YEC-1-31(e)

JM's motion notes as follows for this IR: "The question did not ask for the levelized costs of capacity but for the incremental cost of capacity for each of the two battery options. For example for lead-acid batteries what is the cost per MW to go up from 4 MW to some higher capacity, and similarly for the lithium-ion battery what is the cost per MW to go from 8 MW to a higher capacity?"

Yukon Energy Response

The IR asked the following question: "What is the incremental cost of capacity for each of the two battery types".

The response was as follows: "Please see Table 5-107 (2016 Resource Plan, Section 5.2.10, PDF page 273) for a comparison of levelized cost of capacity for all energy storage options." The referenced page, which can also be located at page 5-112 of Volume 2 of the Application, provides levelized cost of capacity ($/kW.yr) of $539 for the 4MW/40 MW.h Lead-acid ESS and $650 for the 8MW/40MW.h Lithium-ion ESS (estimates are also provided for two other sizes of the Lead-acid ESS, namely 6MW [levelized cost of $811/kW/yr] and 8MW [levelized cost of $1,055/KW.yr]).

Levelized cost of capacity is the appropriate financial attribute used in the 2016 Resource Plan to assess the cost of capacity for each resource option, reflecting the per unit of dependable capacity (per kW) cost of capacity produced by a generation asset over its lifetime, taking into account plant capital investment, plant maintenance costs, and transmission costs to interconnect with the grid, but does not consider plant operating costs. Cost of capital is assumed at 5.45% nominal (3.38% real with inflation at 2%) for resources such as batteries that are assumed to be potentially developed by YEC.[1]

In summary, the response assumed that the IR addressed two battery types referenced in the Application (namely, the 4MW/40 MW.h Lead-acid ESS and the 8MW/40MW.h Lithium-ion ESS), which the motion confirms to be the intent of the question. The response provided the incremental cost of capital per unit of dependable capacity (as per the 2016 Resource Plan assessments, using levelized cost per year for a unit of dependable capacity) for these two battery options, including incremental levelized cost of capacity for three sizes of lead-acid batteries, highlighting the extent to which this cost increases notably as battery size increases from 4MW to 6MW and then 8MW. Similar information for a range of sizes for the lithium-ion batteries cannot be provided by Yukon Energy, as this information is not available from the studies completed to date by TransGrid Solutions Inc.

Yukon Energy believes that it has adequately responded to the interrogatory and that no further response is required at this time.

If you have any questions regarding the above please call.

Yours truly,

E Mollard

Ed Mollard
Chief Financial Officer

[1] See Volume 2 of the Application, 2016 Resource Plan, section 5.1.2, pages 5-7 and 5-8.