YECL-YEC - 1

Topic: Costs Incurred

Reference: Throughout the Application

Preamble: Regarding the Proposed Mayo Hydro Enhancement Project (Mayo B) The wording of the Application seems to imply that no work has been undertaken because no regulatory approvals have been received.

Requests:

(a) Please confirm whether YEC has in fact undertaken any work regarding the Mayo B Project to date.

(b) If there has been any work undertaken on the "proposed" Mayo B project please provide a breakdown of the specific costs incurred to date and the anticipated costs that will be incurred until the end of this regulatory process assuming a decision will not be provided until May 2010.

(c) What is YEC's planned treatment of any such costs should this project not receive YUB regulatory approval?

YECL-YEC - 2

Topic: Project Business Case

Reference: Page 2 of Introduction

Preamble: YEC refers to the business case for the Mayo B project. In YUB Decision 2009-6 YEC is requested to provide the following information.

> "To alleviate existing concerns regarding YEC's ability to estimate, the Board directs YEC, in future, to file any Part 3 applications before this Board only when preliminary engineering estimates are available and included as part of the application. Further, in future GRA applications, the Board directs YEC to include business cases for major capital items, including electronic models. Business cases will include:
>
> descriptions of the project
> economic analysis including preliminary engineering estimates
> discussion of alternatives and how the chosen option was determined
> discussion of the risks of proceeding with the chosen alternative
> discussion of risks of not proceeding with the chosen alternative; and
> discussion of assumptions included in the business case including escalation factors, loading, financial measures, term of project and associated ancillary costs. "

Requests:

(a) Please provide the comprehensive business case for the Mayo B project including updated itemized financial details, costs, cash flows, alternatives, etc in a single business case format.

(b) Please provide the electronic economic models for the business case.

YECL-YEC - 3

Topic: **Sales Forecast**

Reference: **Introduction Page 2**

Preamble: **"….built for a 2011 in service date in order to displace diesel generation that would otherwise be needed to meet forecast load requirements on the two grids"**

Requests:

(a) Please provide a detailed sales forecast in support of this application and project for both the WAF and MD grids.

(b) Please provide the long term diesel forecast relied upon for the project economics for this project.

YECL-YEC - 4

Topic: Carmacks Stewart Transmission Line Stage 2

Reference: Application Page 8

Preamble: "The construction of the proposed Project is contemplated to occur concurrently with Stage Two of the CSTP"

Requests:

(a) Does YEC have a Project Certificate for Stage 2 of CSTP? If so please provide a copy of this certificate. If not when will an application be made? Please provide the latest detailed cost estimates for this project.

(b) Please provide a comprehensive list of the benefits that the joining of the two grids will provide to customers. Will the Mayo system be able to provide backup for the WAF grid? If not what specific benefit do customers on the WAF grid receive from the grid interconnection? If so, please provide the magnitude of back-up capability in GWhr and in MW (peak)?

YECL-YEC - 5

Topic: Carmacks Copper and Alexco

Reference: Throughout the application

Preamble:

Requests:

(a) Please provide the details of the contracts that are being negotiated with these two industrial customers. Please provide specific details in a schedule format that show how each of these customers will contribute financially to the Mayo B project and the associated financial benefit to existing customers.

YECL-YEC - 6

Topic: **Construction Management**

Reference: **Page 17 of the Application**

Preamble: **Contracts have been negotiated with PKS and KGS to provide contract management for the Project**

Requests:

(a) Please provide the detailed cost associated with each line item that contractors are managing related to this project.

(b) Are there other contractors involved in this project? If so please list each contractor and the scope of work they are providing and the cost associated with each contractors work.

YECL-YEC - 7

Topic: Technical Considerations

Reference:

Page 1	The Mayo B project involves enhancements to the existing Yukon Energy Mayo hydroelectric facilities in order to increase hydro generation capacity installed on the Mayo River **from approximately 5MW to approximately 15MW**	5MW = 43.8GW.h/yr 15MW = 131.4GW.h/yr
Page 5	…increase renewable hydroelectric generating capacity on the Mayo River system **from approximately 5MW to approximately 15MW**	5MW = 43.8GW.h/yr 15MW = 131.4GW.h/yr
Page 6	[Components of the project include] A new powerhouse of **approximately 10MW to 12MW of nameplate generating capacity**	10MW = 87.6GW.h/yr 12MW = 105.1GW.h/yr
Page 10	…updated installed capital cost for Mayo B at the planned powerhouse location, with long-term **average annual net generation of 41.4GW.h** (under full long term dispatchable generation load conditions of 720GW.h/yr with Mayo Lake enhanced storage), remains at $120 million.	4.7MW = 41.4GW.h/yr
Page 13	…under the **best case forecast**, Mayo B net generation contribution to the system (with Mayo Lake enhanced storage) **approximates 26.4GW.h in 2012**	3.0MW = 26.4GW.h/yr
Page 13	…under the best case forecast, Mayo B net generation contribution to the system (with Mayo Lake enhanced storage)… **ranges from 14.9 to 41.4GW.h/yr** over the Project's assumed 65 year economic life…	1.7MW = 14.9GW.h/yr 4.7MW = 41.4GW.h/yr
Page 27	Mayo B will add approximately 10MW to the IS capacity, and almost all of this will augment firm winter peaking capacity	10MW = 87.6GW.h/yr
Page 27	At a total IS dispatchable generation load of 416.7GW.h, the Mayo B contribution is approximately **19.2GW.h**	2.2MW = 19.2GW.h/yr
Page 27	At 468.1 GW.h IS generation load, the Mayo B contribution is approximately **28.2GW.h**	3.2MW = 28.2GW.h/yr
Page 28	At 575.1 GW.h IS generation load, the Mayo B contribution is approximately **38.0GW.h**	4.3MW = 38.0GW.h/yr
Page 29	In approximately year 2019, with the presently assumed closure of all industrial customers, the contribution reaches **a low of 14.9GW.h.**	1.7MW = 14.9GW.h/yr
Page 29	The **absolute maximum** of 41.4GW.h is not assumed until 2052…	4.7MW = 41.4GW.h/yr

Preamble: The above table shows several references to the approximate capacity of Mayo B as mentioned throughout the YEC Application to Board. The third column provides conversions of MW into GW.h/yr and vice-versa by assuming output of a plant running 24 hrs a day, 365 days a year. One useful measure which is absent from the Mayo B application is "load factor", which compares real energy output with installed nameplate capacity.

Yukon Electrical is interested in Mayo B's load factor.

Requests:

(a) Please explain what is meant by “average” (in the context of page 10.) (For example, if the best case in 2012 is 26.4GW.h/yr, and the range varies from 14.9GW.h/yr to an “absolute maximum” of 41.4GW.h/yr, how is the average 41.4GW.h/yr?)

(b) In GW.h, what is the average annual net generation over the 65 year life of the project? (For example, if one year is 26.4GW.h, and another year is 14.9GW.h, the average over those two years is 20.65GW.h.)

(c) What is the load factor of the average calculated in (b), assuming 10MW installed nameplate capacity?

YECL-YEC - 8

Topic: Technical Considerations

Reference: From Page 1 of YEC Application to Board:

> The Mayo B Project involves enhancements to the existing Yukon Energy Mayo hydroelectric facilities in order to increase hydro generation capacity installed on the Mayo River from approximately 5 MW to approximately 15 MW.

From Page 6 of YEC Application to Board:

> A new powerhouse of approximately 10 to 12 MW of nameplate generating capacity, with two Francis turbines, was described in the Project Proposal Submission as being located approximately 3.9 km downstream of the existing powerhouse, at a location that provides approximately 64 metres of head with a maximum design flow of approximately 19 cms.

Requests:

(a) Please define hydro generation capacity. Is it total name plate capacities combined or is it total additional output of the combined Mayo Hydro?

(b) For each year of the life of the project, please provide a chart that shows when (and for how long) each of these units will be producing at their capacity.

YECL-YEC - 9

Topic: Technical Considerations

Project Financing Costs, Project Economics and Risks

Reference:

From page 13 of YEC Application to Board:

> "Net generation" impacts of Mayo B are sensitive to assumed overall loads on the WAF/MD systems, and changes to annual grid generation load are forecast to change long term average net generation from Mayo B; for example, under the base case forecast, Mayo B net generation contribution to the system (with Mayo Lake enhanced storage) approximates 26.4 GW.h in 2012, and ranges from 14.9 to 41.4 GW.h/yr over the Project's assumed 65 year economic life, reflecting the impact of changes during this period in overall forecast WAF/MD annual dispatchable generation loads.

Preamble: While the application refers to the Mayo facility being enhanced from 5 MW to 15MW, there is limited analysis regarding enhancement from a past production point of view. Yukon Electrical is interested in this background information.

Requests:

(a) Regarding Mayo 'A':

i. In MW, what is the nameplate generation capacity at Mayo 'A'?

ii. For years 2000-2009, what is the output (in GW.h per year) of Mayo 'A'?

iii. For years 2000-2009, what is the load factor of Mayo 'A'?

iv. What is the expected output of Mayo 'A' (in GW.h per year) when Mayo B is in service?

v. What is the expected net output of Mayo 'A' and Mayo B after Mayo B is in service?

vi. Was the displaced hydro capacity of Mayo 'A' taken into consideration similarly as displaced diesel?

vii. For years 2000-2009, please provide a list of maintenance and upgrade projects and associated costs for Mayo 'A'.

YECL-YEC - 10

Topic: Technical Considerations

Project Financing Costs, Project Economics and Risks

Reference:

Preamble:

Requests:

(a) In order to better understand the costs of potential alternatives or options, please provide the cost per Megawatt of other projects being considered or undertaken by YEC and/or PKS including Aishihik 3.

YECL-YEC - 11

Topic: **Technical Considerations**

Project Financing Costs, Project Economics and Risks

Reference: From page 13 of YEC Application to Board:

Hydro generation capability to displace diesel generation on the WAF/MD integrated grid varies materially depending on overall grid generation loads and on water flows (median flows versus drought or flood conditions) – long term average hydro generation estimates increase (up to certain limits for each facility) as grid loads increase, in part reflecting enhanced ability to capture summer flows and in part reflecting enhanced ability to capture flood condition flows for the purposes of serving loads (see Attachment C which reviews this for the WAF/MD system excluding Mayo B).

Preamble:

Requests:

(a) When do seasonal peak generating conditions occur for Mayo B?

i. Please provide a typical 12 month generation output profile in MW and GW.h

(b) Do these peak generating conditions coincide with seasonal peak load conditions?

(c) When are flood condition flows expected? How often are flood conditions expected?

YECL-YEC - 12

Topic: Technical Considerations

Reference: From Page 1 of YEC Application to Board:

The timing for Mayo B also reflects the opportunity to displace diesel generation energy requirements associated with growing power loads on both grids.

Preamble: Yukon Electrical is interested in historical loads on the Mayo-Dawson and WAF grids to better understand the impact of Mayo B.

Requests:

(a) Regarding the Mayo-Dawson grid, for each year from 2000-2009:

i. In MW, what was the peak load each year?

i. When does this peak typically occur?

ii. In MW, what is the installed nameplate capacity of all hydro on the MD grid?

iii. In GW.h per year, what was the production of the installed hydro?

iv. What was the load factor of the installed hydro?

v. In MW, what is the installed nameplate capacity of diesel?

vi. In GW.h per year, what was the production of the installed diesel?

vii. In MW, how much hydro is spinning, productive hydro for:

i. Normal operation

ii. Peak operation

viii. In MW, over the past 10 years, how much diesel was spinning, productive diesel for:

i. Normal operation

ii. Peak operation

(b) Regarding the Whitehorse-Aishihik-Faro grid, for each year from 2000-2009:

i. In MW, what was the peak load each year?

i. When does this peak typically occur?

ii. In MW, what is the installed nameplate capacity of hydro?

iii. In GW.h per year, what was the production of the installed hydro?

iv. What was the load factor of the installed hydro?

v. In MW, what is the installed nameplate capacity of diesel?

vi. In GW.h per year, what was the production of the installed diesel?

vii. In MW, how much hydro is spinning, productive hydro for:

  i. Normal operation

  ii. Peak operation

viii. In MW, over the past 10 years, how much diesel is spinning, productive diesel for:

  i. Normal operation

  ii. Peak operation

(c) Load flow calculations are a fundamental tool used to determine energy flows in an electrical grid. For the interconnected system please provide the following:

i. With no industrial load and maximum output of Mayo A+B on the Interconnected System (IS) how much energy will be flowing south of the Minto Land substation.

ii. With no industrial load and maximum output of Mayo A+B on the IS how much energy will be flowing south and east of the Carmacks substation.

iii. With no industrial load and maximum output of Mayo A+B on the IS how many communities could Mayo A+B support islanded.

  a. Under peak load conditions

  b. Under minimum load conditions

iv. With no industrial load and maximum output of Mayo A+B on the IS how much energy is fed into the old WAF grid.

YECL-YEC - 13

Topic: Project Financing Costs, Project Economics and Risks

Reference: From Page 5 of YEC Application to Board:

> The Project will be developed at an estimated cost of $120 million to help supply growing MD and WAF grid power loads with renewable energy that displaces required diesel generation.

Preamble:

Requests:

(a) What are the tolerances around the estimated $120M project costs? What is the range of costs?

(b) Please explain how YEC will deal with any cost overruns. Who is expected to pay for any such potential cost overruns?

YECL-YEC - 14

Topic: Technical Considerations

Reference: From page 8 of YEC Application to Board:

> Stage One of CSTP was completed in November 2008 and connected the Minto copper mine and Pelly Crossing to the WAF grid immediately displacing over 30 GW.h per year of diesel generation with surplus hydro generation.

Preamble:

Requests:

(a) Please provide a breakdown of the diesel units (location) that make up the 30 GW.h?

(b) What was the final cost of CSTP Stage One?

   i. Was the original scope of the project changed? If so, what was added and/or removed from the original scope and what was the financial implication of each of these items?

YECL-YEC - 15

Topic: Ratepayer Impacts Short and Long Term

Project Financing Costs, Project Economics and Risks

Reference: From page 14 of YEC Application to Board:

> With a ratebase net cost of $36.5 million and Mayo B net generation resulting from the base case grid load forecast, Figure 1 demonstrates that Mayo B will create **ratepayer cost savings** each year compared to diesel generation that would otherwise be required. These annual savings start at approximately $3.8 million in year 1, grow to $5.7 million by year 5, and then fall to $1.6 million in year 8 (2019) when no industrial loads are assumed to be connected. Finally, higher annual savings for each subsequent year (e.g., $2.6 million in year 10, and $9.3 million in year 20) are shown.

From Attachment D-3, relating to supply of Carmacks Copper:

> Yukon Energy supply to this mine will require a new 138 kV spur line (or alternative configuration).

Preamble:

Requests:

(a) Please breakdow the “ratepayer savings” from the point of view of

  i. residential ratepayers, and

  ii. industrial ratepayers

(b) Please explain YEC’s policy regarding transmission extensions to large industrial loads, how such policy pertains to the Terms and Conditions of Service (formally Electric Service Regulations), and how large industrial loads have historically paid for their connection to the existing grid.

(c) What is the estimated length of the Distribution and/or Transmission facilities for Alexco?

(d) What is the estimated cost of the Distribution and/or Transmission facilities for Alexco?

(e) What is the estimated length of the 138 kV spur line to Carmacks Copper?

(f) What is the estimated cost of the 138 kV spur line to Carmacks Copper?

  i. What are the potential financing arrangements for this project?

YECL-YEC - 16

Topic: **Estimating and Project Management**

Technical Considerations

Rate Base Impacts Short and Long Term

Reference: From page 24 of the YEC's Mayo B application:

> It is assumed that customers isolated from the grid would be supplied by on-site diesel generation with all costs being excluded from YUB consideration for the purpose of Yukon wide regulated rate setting (in accordance with OIC 1995/90).

From page 40 of YEC application:

> Not proceeding with the Mayo B expansion means that YEC and Yukon ratepayers would be at risk during the near term (2012-2015) for the additional forecast 28 GW.h or more per year of diesel generation (i.e., the diesel generation that Mayo B would otherwise displace) with related costs and GHG emissions.

Preamble: The application refers to ratepayer savings due to displaced diesel as part of the justification for the Project.

Requests:

(a) If "customers isolated from the grid" – specifically, large industrial customers – would normally be supplied by their own on-site diesel generation whose costs are excluded from YUB consideration for the purpose of rate setting, why would ratepayers be at risk for the "additional forecast 28GW.h or more" used in the economic analysis from 2012 -2016?

   i. How much of the forecast diesel generation is due to large industrial customers who would otherwise be supplied by their own on-site generation (absent any new service lines)?

YECL-YEC - 17

Topic: **Technical Considerations**

Rate Base Impacts Short and Long Term

Project Financing Costs, Project Economics and Risks

Reference: From page 20 of YEC Application – under "positive effects":

> System-wide grid reliability and flexibility once CSTP is interconnected with the WAF and Mayo-Dawson grids with the increased power generation at Mayo B enabling dissemination of the power to where it is needed.

From page 5 of YEC Application:

> The Project's development at this time has been conditional upon the completion of stage 2 of CSTP to connect the two grids.

Preamble:

Requests:

(a) Please explain how reliability is foreseen to be improved. For example, interconnection may decrease reliability because events in Dawson City could potentially propagate to Whitehorse.

(b) Please provide historical reliability (from 2000- 2009)of the Mayo-Dawson Grid regarding underfrequency, overfrequency, undervoltage, overvoltage, and blackout events.

(c) Please provide historical reliability (from 2000- 2009) of the WAF Grid regarding underfrequency, overfrequency, undervoltage, overvoltage, and blackout events.

(d) Please provide evidence that suggests these outages will not propagate from the WAF grid to the MD grid and vice-versa.

(e) Please provide evidence (load flow analysis) that quantifies the power which ratepayers on the WAF grid can expect from Mayo B.

YECL-YEC - 18

Topic: **Project Financing Costs, Project Economics and Risks**

Estimating and Project Management

Alternatives Considered

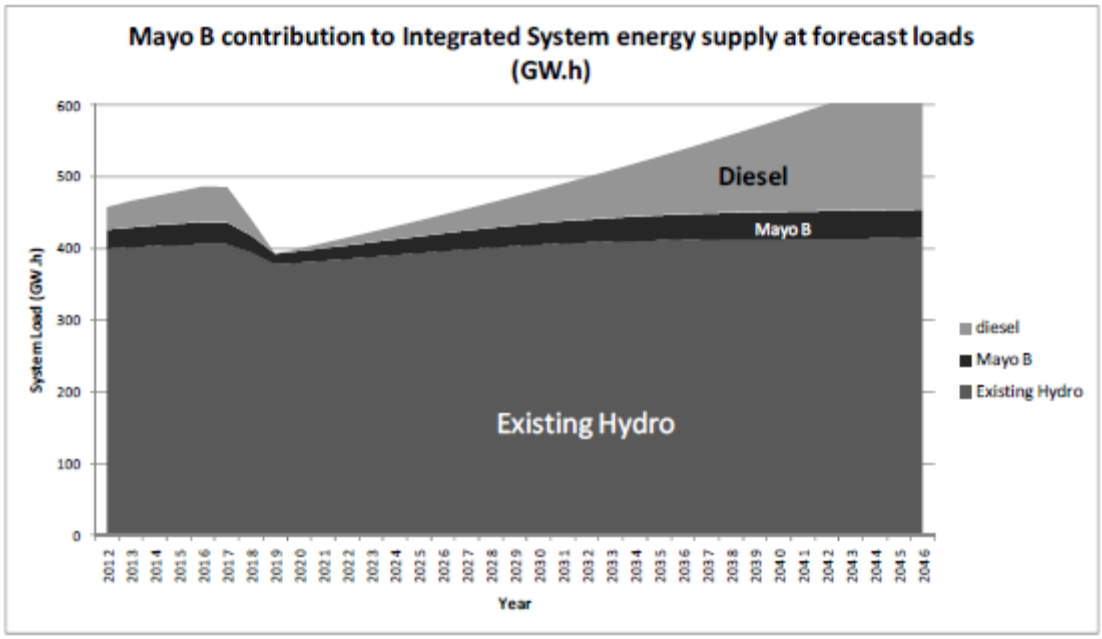
Reference: From page 25 of YEC Application:

Mayo B economics have been considered and assessed on the following basis:

From page 27 of YEC Application:

5) **Long-term IS Load Forecast:** The Mayo B economics have been considered in light of the present long-term load forecast for the IS as set out in Attachment D. This comprises existing non-industrial load, plus a reasonable assumption for growth of these loads, as well as only present and anticipated near-term industrial loads (Minto, Alexco and Carmacks Copper, for the presently anticipated mine lives). Given the net contribution (and resulting economic value) of Mayo B in any year is greater with a larger overall grid load, the assumptions used regarding industrial load forecasts (i.e., limited to only present and reasonably foreseeable industrial customer loads) are likely conservative, since these industrial load forecasts do not include load for not yet confirmed near-term industrial loads, or for any other industrial loads that may arise in the medium to long-term.

From page 29 of the YEC's Mayo B application, see Figure 2.



Preamble: Much of the Project's justification relies on forecast load. Yukon Electrical believes that forecast supply may influence the need for the Project.

Requests:

(a) Was medium to long-term Interconnected system (IS) supply forecast considered? For example, if a medium-to-large-scale (producing at 5-20MW) renewable generation project comes online in the next 15 years, how would that affect "Mayo B economics"?

Please provide Figure 2 for the following scenarios:

i. A new renewable supply, producing at 5MW, in 2025

ii. A new renewable supply, producing at 20MW, in 2025

(b) Which if any projects were considered as part of YEC's load forecast and which are renewable generation?

YECL-YEC - 19

Topic: Technical Considerations

Rate Base Impacts Short and Long Term

Reference: From page 25 of YEC Application:

> Mayo B economics have been considered and assessed on the following basis:

From page 27 of YEC Application:

> **6) Contribution to secondary energy generation:** Under forecast future load scenarios, the ability of the existing system to serve secondary energy will become considerably more constrained than at present. Mayo B increases the IS secondary energy potential which can provide value in terms of added revenues to help offset plant costs.

Preamble:

Requests:

(a) With Carmacks Copper coming on at 52GW.h/year and Mayo B contributing, under best case assumptions, 41.4GW.h/year, how is the IS secondary energy potential increased?

YECL-YEC - 20

Topic: **Technical Considerations**

System Sales and Generation

Estimating and Project Management

Reference: From page 25 of YEC Application:

> Mayo B economics have been considered and assessed on the following basis:

From page 27 of YEC Application:

> **7) Contribution to Firm Winter Peak Capacity**: Mayo B will add approximately 10 MW to the IS capacity, and almost all of this will augment firm winter peaking capacity. Under Yukon Energy's capacity planning criteria, this added winter peak capacity at Mayo will defer the need to provide additional winter peak capacity on the IS. This economic assessment of Mayo B impacts has not attempted to assign any specific value to this contribution to firm winter peak capacity.

Preamble:

Requests:

(a) If "Contribution to Firm Winter Peak Capacity" is part of the basis of Mayo B economics;

i. What is meant by "almost all of this will augment firm winter peaking capacity"?

ii. Will Mayo B provide 10MW output during the winter?

YECL-YEC - 21

Topic: Technical Considerations

Reference: From page 27 and 28 of YEC Application:

> Mayo B's full contribution to the system's ability to serve firm load (i.e., to avoid diesel generation) under very high IS load scenarios is as high as 41.4 GW.h. Within the range of reasonably foreseeable load scenarios within the next 30 years and assuming the current and committed IS generation and transmission capabilities, the Mayo B contribution (evaluated as an average [mean] contribution across all variety of water flows at the given load level) varies with load as follows:
>
> • At a total IS dispatchable generation load of 416.7 GW.h, the Mayo B contribution is approximately 19.2 GW.h;
>
> • At 468.1 GW.h IS generation load, the Mayo B contribution is approximately 28.2 GW.h; and
>
> • At 575.1 GW.h IS generation load, the Mayo B contribution is approximately 38.0 GW.h (only small incremental benefits arise as the IS dispatchable generation load grows beyond 575 GW.h).

Preamble:

Requests:

(a) Please clarify. What are "very high IS load scenarios"?

i. When are they expected?

ii. How often are they expected?

YECL-YEC - 22

Topic: **Technical Considerations**

System Sales and Generation

Rate Base Impacts Short and Long Term

Project Financing Costs, Project Economics and Risks

Reference: From footnote on page 27 of YEC Application:

> All IS generation loads referenced in this section are net of Fish Lake generation (approximately 8.73 GW.h) and YEC wind generation (approximately 1 GW.h).

From footnote on page 28 of YEC Application:

> Figure 2 shows generation and loads net of wind and Fish Lake hydro, which are not dispatchable generation and are very small. In this analysis, Fish Lake and existing Haeckel Hill wind are directly netted off of loads before running the system simulation model for dispatchable resources. Enhanced Mayo Lake storage is assumed in Figure 2.

And from page 29 of YEC Application:

> The absolute maximum of 41.4 GW.h is not assumed until 2052 (when forecast grid loads without any industrial loads approximate 720 GW.h), but very substantial contributions are seen much earlier, e.g., in year 2017 over 30 GW.h of Mayo B contribution to firm load (avoided diesel - equaling approximately $8.8 million/year in diesel savings (2017$) in that year alone).

From page 26 of YEC Application:

> The Mayo A and B plants will be more flexible than the Whitehorse plant, which is a largely run of the river plant with relatively severe constraints on dispatchable operation

Preamble: Yukon Electrical is concerned that Fish Lake and Haeckel Hill were not taken into consideration as the 9.73GW.h of energy they provide is not “orders of magnitude” different than the output/diesel displacement of Mayo B (ranging from 14.9 to 41.4GW.h,) not to mention the significant attention paid to the 4GW.h of energy the enhanced Mayo Lake license will provide.

Requests:

(a) Why were ~10GW.h of renewable generation not included when discussing best case scenarios of generating 41.4GW.h and displacing 30GW.h of diesel?

(b) If YEC considers that 10GW.h of renewable generation can be excluded, why is emphasis placed on the additional 4GW.h that the expanded water license will allow?

(c) Given the "relatively severe constraints" on the Whitehorse plant's dispatchable operation, why is it included in the calculations?

YECL-YEC - 23

Topic: **Technical Considerations**

System Sales and Generation

Rate Base Impacts Short and Long Term

Project Financing Costs, Project Economics and Risks

Reference: From page 41 of the YEC's Mayo B application:

> Under reasonably foreseeable near term load conditions (2012-2015), integration of the Project with the Mayo Lake storage enhancement into Yukon power systems would be expected to yield a net firm energy benefit (diesel generation displacement) averaging approximately 28 GW.h/year of firm energy over the four years (plus enhanced potential secondary energy). At 26 cents/kWh incremental cost, 28 GW.h of diesel generation would have added annual fuel and operating costs of approximately $7.3 million. In contrast, the projected near term average annual Mayo B cost to ratepayers for these same loads **approximate $3.1 million/year**, net of federal and YDC contributions and with a full 6.56% average return on rate base.

From page 43 of the YEC's Mayo B application:

> Without Carmacks Copper load, the 2012-2015 projected average annual diesel displacement is approximately 18 GW.h, and annual average ratepayer net savings (diesel costs avoided) from Mayo B are $1.6 million/yr. Without Carmacks Copper load and any Mayo Lake enhancement, the 2012-2015 projected average annual diesel displacement is approximately 15.8 GW.h, and annual average ratepayer net savings (diesel costs avoided) from Mayo B are $1.0 million/yr.

Preamble: It is not clear whether the, 8.73GW.h and 1GW.h for Fish Lake and Haeckel Hill, respectively, has been taken into consideration. The following table summarizes the above, and also includes Fish Lake and Haeckel Hill (as per this report.):

Scenario	Diesel Savings (when Fish Lake and Haeckel Hill are included)	Diesel Costs (at $.26 / kWh)	Diesel Savings, net of Federal and YDC contributions (i.e. subtract $3.1 million)
Including Carmacks copper	28GW.h – 1GW.h – 8.73GW.h = 18.27GW.h	$4.75 million	$1.65 million
Excluding Carmacks Copper	18GW.h – 1GW.h – 8.73GW.h = 8.27GW.h	$2.15 million	-$0.95 million
Excluding Carmacks Copper and Enhanced storage	15.8GW.h – 1GW.h – 8.73GW.h = 6.07GW.h	$1.5 million	-$1.6 million

Requests:

(a) Did YEC take Fish Lake and Haeckel Hill into consideration for the economics as referenced in page 41 and page 43 of the application?

(b) As demonstrated in the table above, please provide the actions considered and taken by YEC to mitigate the risk to the ratepayers under the scenarios outlined.

YECL-YEC - 24

Topic: **Technical Considerations**

System Sales and Generation

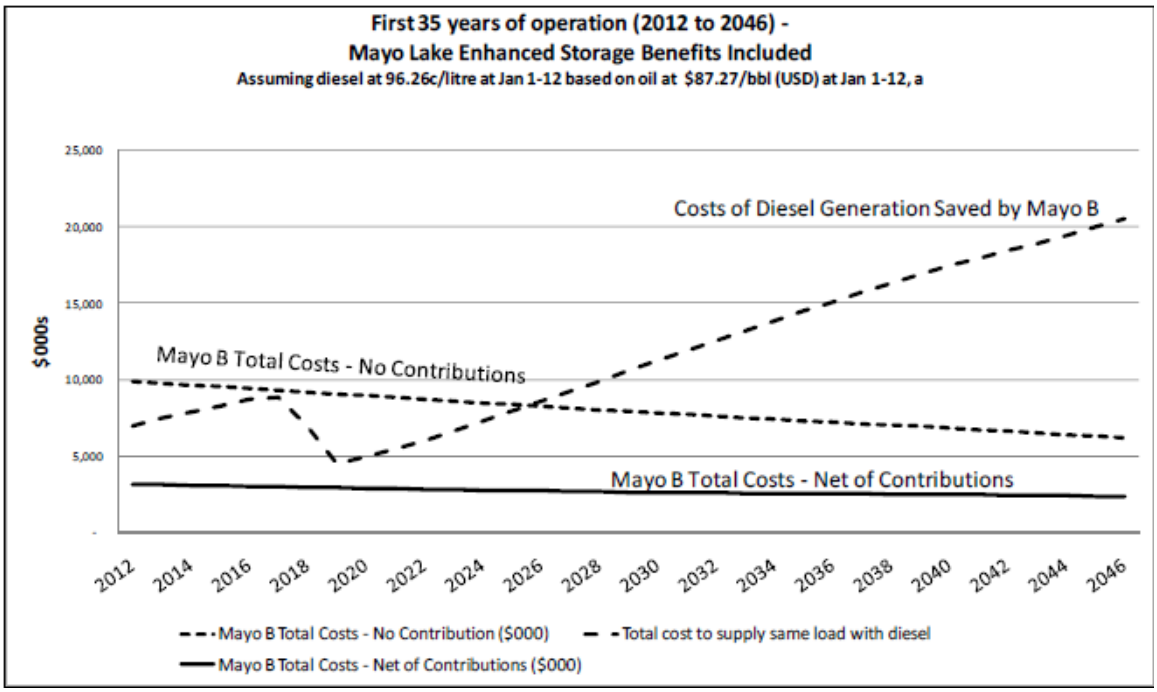
Rate Base Impacts Short and Long Term

Project Financing Costs, Project Economics and Risks

Estimating and Project Management

Reference:

On Page 14 of YEC Application, see Figure 1.



Preamble:

Requests:

(a) Please Provide Figure 1 showing “Costs of Diesel Generation Saved by Mayo B” if:

i. Carmacks Copper and Alexco do not come online

ii. Fish Lake (8.73GW.h) and Haeckel Hill (1GW.h) are included

iii. Enhanced Lake storage excluded

iv. All of the above

(b) From Figure 1, absent any Federal or Territorial funding, Mayo B appears not to result in any real diesel cost savings until the year 2026. Is it reasonable to conclude that this figure suggests there are no plans for any other dispatchable, large renewable generation plants coming online before 2026, which also might contribute to diesel cost savings?

YECL-YEC - 25

Topic: Technical Considerations

Project Financing Costs, Project Economics and Risks

Reference: From page 36 of YEC Application:

> It became apparent during the YESAB adequacy review process that provision for an additional metre of water storage at Mayo Lake in the Mayo B Project proposal presented a significant risk to project timelines and available federal funding.

Preamble:

Requests:

(a) What are YESAB's concerns regarding the additional metre?

YECL-YEC - 26

Topic: Project Financing Costs, Project Economics and Risks

Estimating and Project Management

Reference:

From page 3 of YEC Application to Board:

> Yukon Energy has carried out concept and preliminary engineering and related geotechnical field studies since summer 2008 through KGS Group ("KGS"), retained Peter Kiewit and Sons ("PKS") in June 2009 to participate in Project planning and costing for a potential target price construction contract approach, and proceeded in fall 2009 with an early selection competitive process for the long lead turbine/generator ("T/G") equipment.

Preamble:

Requests:

(a) Please outline the competitive bid process followed to select KGS and PKS groups.

(b) Please provide all RFPs and a corresponding list of bidders and bids for all contracts and MOUs involved in the Project (including turbine/generator (T/G) equipment.)

(c) What contractual commitments have been made to KGS and/or PKS regarding construction of Mayo B?

(d) What contractual commitments have been made for T/G equipment?

(e) What are the financial consequences to YEC or related parties of withdrawing from these contracts?