

**OPENING STATEMENT OF YUKON ENERGY CORPORATION**

**an Application by Yukon Energy Corporation**

**under Part 3 of the *Public Utilities Act* for**

**an Energy Project Certificate and an Energy Operation Certificate**

**for the Proposed Mayo Hydro Enhancement Project (Mayo B)**

**April 6, 2010**

## *Overview*

Mr. Chair and members of the panel, Yukon Energy welcomes the opportunity today to be in front of the Yukon Utilities Board for your review of the Mayo Hydro Enhancement Project (Mayo B) Application that Yukon Energy filed in early December 2009 with the Minister of Justice for Energy Certificates under Part 3 of the *Public Utilities Act*.

Yukon Energy has worked diligently with both the federal and territorial governments to ensure that Mayo B will be an outstanding legacy asset for Yukon ratepayers – a \$120 million renewable hydro enhancement that will cost ratepayers only \$36.5 million spread over 65 years. An asset costing ratepayers over these 65 years less than 9 cents per kW.h to displace diesel energy generation costing more than 25 cents/kW.h, resulting in cost savings for ratepayers in every year of its operation. An asset that will not increase electricity rates.

Mayo B will be by far the largest enhancement of Yukon's renewable hydro generation resources since construction of the Whitehorse #4 unit in the 1980s. It will enhance the Mayo facility similarly to the way that Whitehorse #4 enhanced the Whitehorse Hydro Plant.

Mayo B's additional 10 MW enhancement at the existing Mayo facility will roughly double the amount of annual hydro electricity that can be generated on the Mayo River downstream of the existing Wareham Dam, without requiring a new dam structure. Completion of the Carmacks-Stewart Transmission Project (CSTP) Stage 2 by early 2011 will ensure that the added energy from Mayo B can be used as required through both the WAF and MD grids. As a result, Mayo B will reduce the future requirement to use diesel generation in Yukon, providing considerable cost savings for ratepayers and reducing GHG emissions.

During the recent 2008/2009 GRA proceeding, Yukon Energy reported that electricity energy requirements on the two grids will outstrip available surplus hydro by 2012 due to projected load growth over both the near and longer term - and that Mayo B is only one of several renewable generation projects that will be needed to meet future system energy requirements using renewable generation instead of diesel.

At its core, Mayo B reflects an extraordinary opportunity to reduce diesel generation in a cost effective and timely manner to the benefit of ratepayers in the near as well as the longer term.

Forecast diesel generation required to meet increasing system loads and available no cost funding from governments both enhance the timing of the Mayo B opportunity today. Yukon Energy has been clear that notwithstanding the forecast load growth it could not proceed at this time with the Mayo B Project without the significant no cost capital contributions by both the Federal and Yukon governments (YUB-YEC-1-36(a)).

Even though Mayo B provides an additional 10 MW of winter generating capacity to the grids, the main purpose or need for Mayo B through 2019 and beyond is to provide a source of economical renewable energy to supplant baseload diesel generation requirements rather than to provide additional capacity.. Our cost benefit assessments of Mayo B have focused, primarily on its diesel energy displacement benefits without attempting to quantify its additional capacity reliability benefits.

### ***Current YUB Review***

Mr. Chair, Yukon Energy realizes that the purpose of the current YUB review and hearing is to provide the Minister with the Board's report and recommendations on the potential benefits, costs, risks and customer impacts that influence whether Mayo B should proceed as proposed by Yukon Energy. Our Application and our responses to various information requests from the Board and intervenors address these matters, and demonstrate the clear and material net benefits to ratepayers in both the near and long term.

YEC's Part 3 Application for Mayo B continues to honour Yukon Energy's ongoing commitment, as set out in our 20-Year Resource Plan 2006-2025, to seek an open and transparent public review by the YUB of large capital projects.

### ***Challenges to the Board's Review***

#### ***(i) Unfortunate and ill-informed allegations made by an intervenor***

Recently, Yukon Conservation Society (YCS) and others have raised concerns in the media and with the YUB regarding the timing of this YUB review process – noting that this review is being undertaken before the YESAB process has been completed and final permits issued, and suggesting that YEC has surprised parties by proceeding to finalize a Mayo B construction contract at this time. In this regard, YCS and others have suggested that Yukon Energy is “sidestepping the regulatory process”, “dodging the regulators” and placing undue pressure on the YUB to “rubberstamp” this project.

Yukon Energy fundamentally takes issue with any such suggestions that seek to denigrate the current YUB review. It is simply inappropriate for parties such as YCS who are a formal intervenor in this process to make such statements that totally fail to reflect the record filed in this proceeding as well as in the YESAB proceeding.

Throughout each of the regulatory filings (including this Part 3 Application) the approach taken by YEC relating to such issues as the timing of construction and the need to enter into contracts early in 2010 for long lead equipment and with a contractor which would construct the Project have been clearly and transparently laid out both in the Application and in the YESAB Application.

The Board is proceeding in accordance with Terms of Reference as set out by the Minister. Its scope and timing was set with full knowledge of the concurrent YESAB process, the no cost government funding commitments and their related timing requirements, and the ongoing schedule and timing of YEC's Mayo B project.

***(ii) Part 3 hearing not a Resource Plan review or a GRA***

In the context of both the Minister's Terms of Reference and the intent of YEC's ongoing commitment to seek YUB review prior to construction of any new capital project costing \$3 million or more, we note that this hearing is not intended to be either a broad review of resource plan options and requirements or a revenue requirement review of the extent to which Mayo B costs have been or will be prudently incurred and should be recovered through rates. Such matters are to be properly addressed in other YUB reviews – including the next GRA for Yukon Energy.

***Orderly Resource Planning Process Initiated in 2005***

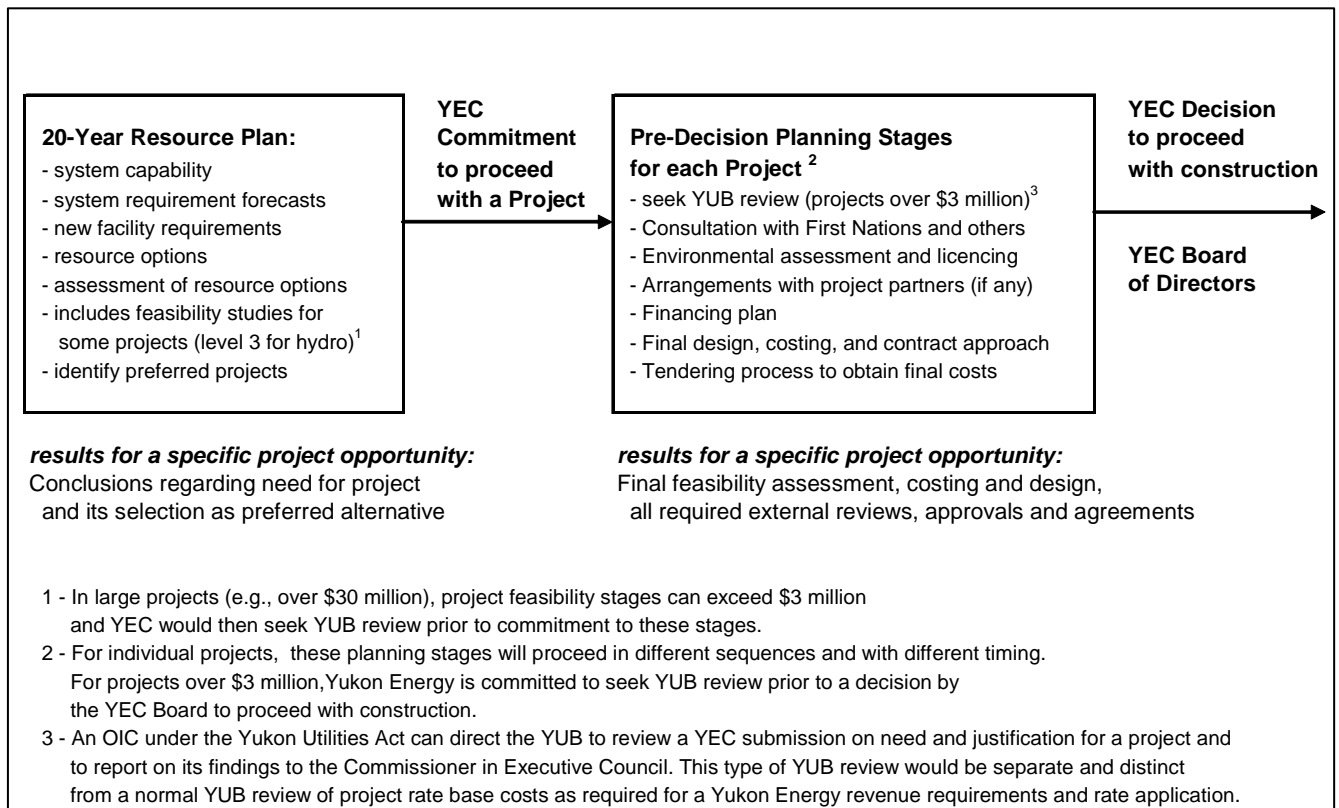
The current YUB review of Mayo B is part of an orderly process that Yukon Energy initiated in 2005 to address key regulatory issues in Yukon, including the need to initiate resource planning activities to address future major capital bulk power supply options.

The resource planning process that commenced in 2005 included a review of system capability, forecast system requirements, new facility requirements, resource options and an assessment of resource options for a 20 year period (2006-2025) in order to identify preferred options to be further defined in the pre-decision planning stages of development.

The Resource Plan as then proposed also stipulated that before a final decision to proceed with construction of a capital project greater than \$3 million, Yukon Energy would ensure that each of the following pre-decision planning stage milestones must be achieved:

- YUB Review (through Part 3 or other process),
- Consultation with First Nations and others as required,
- Environmental assessment and licencing,
- Arrangements with project partners, if any,
- Financing planning,
- Final design, costing and contract approach, and
- Tendering to secure final costs.

**20-Year Resource Plan and Decisions on Specific Projects**  
**Yukon Energy 20 Year Resource Plan: Overview (p. 4)**



A balanced approach was proposed to ensure that Yukon Energy is sufficiently prepared so as to “protect” feasible options to proceed with power projects quickly once new industrial loads develop, while at the same time not spending more than is prudent today to protect and advance potential power projects by, for example, proceeding to detailed feasibility

stages based on mere load speculation or industrial development scenarios that are highly uncertain.

The Resource Plan hearing in 2006 focused at a detailed level on the short term capital requirements for commitment prior to 2009 to meet capacity demand requirements and to take advantage of opportunities to develop infrastructure to utilize the current hydro surplus with available no cost capital contributions to the benefit of ratepayers. The review did not seek approval of costs for any specific project, as before any capital expenditures were put into rates these would need to be reviewed by the Board as part of a General Rate Application.

The Board's review of Yukon Energy's 20-Year Resource Plan in 2006 resulted in the Board's January 2007 Report and Recommendations to the Yukon Government. Key recommendations were made related to several near term projects to enhance transmission and generation capacity on the grid. The report also endorsed the long term planning approach advanced by Yukon Energy in the 20-Year Resource Plan, noting that "when YEC proposes a new facility, YEC is to outline the risk of proceeding, the benefits to existing ratepayers, and sensitivities to existing ratepayers if the economic life of the project is shorter than forecast".

Yukon Energy has been following the planning process commenced in 2005 and set out in the 20-Year Resource Plan endorsed by the YUB in its Report and Recommendations to the Minister (January 2007).

### ***Resource Planning Activities initiated in 2007***

Subsequent to the Resource Plan review process in 2006 and the CSTP Part 3 hearing in May 2007, it became apparent that reduced available surplus hydro generation due to new or expanding loads on the system was advancing the timing for potential renewed baseload diesel generation.

Yukon Energy discussed this concern during the 2008/2009 GRA noting that the current hydro generation surplus at long term average flows, after CSTP Stage One and Minto connection and before any secondary sales, would be fully utilized by firm sales on WAF sometime between 2011 and 2014 and the connection of new industrial loads as soon as 2010/11 could lead to the requirement for 50 to 100 GWH of baseload diesel generation within the 2010-15 time period.

In mid-2007, Yukon Energy initiated an update to the studies of hydro sites and enhancements for near term development (for 2010-2015 in service). Based on this review, no greenfield hydro generation sites were considered to be competitive with hydro enhancement options due to the fact that enhancements to current infrastructure typically do not involve the same extensive planning timelines, costs and complexities as new greenfield projects. Mayo B was identified in this review as the largest available new energy enhancement opportunity for Yukon Energy's existing hydro generating facilities and the only such enhancement opportunity that could feasibly be licensed and built to be in service by 2012.

Ongoing feasibility and planning work continues to be undertaken for near term development of Aishihik plant enhancement through the Gladstone Diversion and Whitehorse plant enhancements through small scale Atlin winter storage and/or Marsh Lake Fall/Winter Storage.

Both geothermal and wind generation continue to be investigated as potential future renewable generation options for Yukon Energy, but, given the timing and then existing state of knowledge and experience, these were not considered as feasible near term alternatives to the Mayo B project.

### ***Mayo B Planning Process – Key Steps Leading to Part 3 Application***

During the recent 2008/2009 GRA, Yukon Energy provided up to date information related to the business case for Mayo B, including a review of estimated costs to date as prepared by KGS Group and YEC, risks of proceeding with the project or not proceeding with the project, ratepayer impacts, alternatives to Mayo B considered, and the level of deferred costs expected to be incurred in 2008 and 2009 to develop this project. In the reasons for decision accompanying Order 2009-8, the Board again endorsed Yukon Energy's planning processes.

Since the 2008/2009 GRA filing in October 2008 Yukon Energy has engaged in the feasibility and planning activities required to make a decision to proceed with the Mayo B project, including the following key steps prior to filing its Mayo B Part 3 Application in December 2009:

- **YESAB Mayo B Project Proposal filed February 27, 2009** – the YESAB process is required to be completed, with issuance of decision documents prior to issuance of any permits or licences that would allow this project to proceed. The YESAB filing set out an in-service date for Mayo B at the end of 2011, with construction start by

May 2010 and the Turbine/Generator tender in September 2009. By early December 2009 when the Part 3 Application was prepared, YEC had removed the Mayo Lake storage enhancement component from the YESAB Mayo B Project Proposal, the YESAB Mayo B review process had advanced to the screening stage, and a Draft Screening Report was expected by January 31, 2010.

- **Federal Government Infrastructure Funding (GIF) Application was filed March 2009, approval of the Application was announced May 14, 2009, and a funding agreement with Canada was signed August 31, 2009** – Yukon Energy in its YESAB Proposal and in responses to interrogatories provided during the 2008/2009 GRA made it clear that it could not proceed with Mayo B at this time absent significant no cost infrastructure funding contributions. The Federal Contribution Agreement addresses this basic precondition but it also requires the project be substantially complete by March 31, 2012.
- **May 2009 final planning for CSTP Stage 2** – The federal Minister’s approval in May 2009 of YEC’s GIF funding Application provided one key precondition to allow YEC to proceed with final planning for CSTP Stage 2 for in-service by early 2011; CSTP completion before summer 2011 was an important requirement within the overall Mayo B construction schedule for in-service by the end of 2011 or early 2012.
- **Selection process for MOU construction contractor in June 2009** – The construction management approach followed by Yukon Energy allowed for early competitive selection of a construction contractor in spring 2009 with selection of Peter Kiewit Sons through an MOU contract awarded in June 2009. Through the MOU with Kiewit, Yukon Energy established procedures to arrive at an open book procurement and construction contract that included an agreed upon construction and development schedule and target pricing formula. This approach was adopted to reduce price and risks of delay, and risks related to the lack of contractor participation in the early stages of project design. While working to secure a final construction agreement, the contractor worked with YEC and its design engineer (KGS) in reviewing preliminary designs and cost estimates, and the tender process for selecting the turbine/generator supplier. By early December 2009 YEC had updated capital cost estimates from this process and agreed to commercial terms with Kiewit that formed the basis for finalizing a construction contract.
- **Selection process for Turbine/Generator Contractor** - The turbine/generator was identified as key long lead equipment for the project that needed to be tendered in fall 2009 to enable this equipment to be installed on site in fall 2011. On

September 16, 2009 Yukon Energy issued an RFP for a Turbine/Generator supplier and on November 6, 2009 this process closed (an award was made after the Part 3 Application was filed).

- **Yukon Government designation of Mayo B as a regulated project pursuant to Part 3 of PUA (November 25, 2009)** – While Yukon Energy is committed to seeking YUB review of capital projects greater than \$3 million, neither Yukon Energy nor the Board can initiate a public review absent necessary direction from the Yukon Government. In this case, the designation of Mayo B by OIC as a “regulated project” allowed Yukon Energy to initiate a Part 3 Application and pursuant to the process established under the Act allows the YUB to undertake a public review of the Project.
- **Additional no cost funding provided by Yukon Development Corporation -** This no cost funding was committed in December prior to the Part 3 Application. In combination with the funding provided through the Canada GIF funding agreement, it reduces the cost of the project to be borne by ratepayers from \$120 million to \$36.5 million.
- **YEC filed Part 3 Application December 11, 2009** – Following the designation of the Mayo B Project as a regulated project, Yukon Energy prepared and submitted its Part 3 Application on December 11, 2009.

### ***Overview of Part 3 Application***

The Application provides the information on Mayo B as prescribed by OIC 2007/50, describing the applicant, the project description, the project justification, consultation undertaken and other applications and approvals required. The following highlights are noted (see Attachment A for the tables and figures referenced below from the Application):

- **Table 1 at page 12** – Summary of no cost federal and YDC funding sources showing basis for YEC net ratebase cost of \$36.5 million for the \$120 million total capital cost, and summary of YEC Mayo B levelized cost of energy (LCOE) in 2012\$ over 65 year economic life at
  - 6.69 cents/kW.h assuming 1 metre added Mayo lake storage, and
  - 7.59 cents/kW.h without any change in Mayo Lake water licence.
- **Figure 1 at page 14** - Shows Mayo B annual costs and diesel cost savings for the first 35 years of the 65 year economic life (i.e. to 2046), with and without the no

cost government funding, assuming incremental diesel generation costs of approximately 26 cents/kW.h (2012\$), Mayo B in-service at end of 2011, base load forecast with Carmacks Copper mine load by 2012, and Mayo Lake enhanced storage.

- Figure 1 shows annual YEC costs for Mayo B below incremental diesel generation costs for every year of Mayo B service.
  - This assessment addresses “net generation” only for Mayo B, i.e., the diesel generation projected to be displaced by Mayo B, which is sensitive to assumed Integrated System (IS) loads for the connected WAF/MD grids.
- **Figure 2 at page 29** – Shows the overall contribution of Mayo B to forecast generation requirements, highlighting the remaining baseload diesel generation requirements throughout the first 35 years of the 65 year economic life of Mayo B as well as the impact of assumed mine loads prior to 2018 and the effect of assuming no such industrial loads thereafter.
- **Figure 4 at page 39** – Shows Figure 1 adjusted to remove Carmacks Copper load from any part of the first 35 year forecast period:
  - Figure 4 continues to show annual YEC costs for Mayo B below incremental diesel net generation costs for every year of Mayo B service (the diesel generation costs line is lowered prior to 2019 to reflect the reduced IS load without Carmacks Copper).
  - Footnote 68 notes that the YEC LCOE for Mayo B without Carmacks Copper load is 7.30 cents/kW.h with enhanced storage at Mayo Lake and 8.19 cents per kW.h without any change to the Mayo Lake licence, i.e., the levelized cost over the 65 year life remains below the target maximum of 10 cents per kW.h.
- **Risks/ Mitigation of Risks** - The Application notes at page 34 that the largest single factor likely to affect whether Yukon Energy could proceed with Mayo B was addressed through the Federal Contribution Agreement and the Yukon Government commitment for no cost capital funding from YDC. This funding largely mitigates concerns as to load risks and near term rate cost impacts.

Presently, the critical risk facing Yukon Energy relates to the assessment and permitting processes which need to proceed in a timely and orderly manner to enable construction start by June 1, 2010. Yukon Energy has been clear since filing its YESAB application that the project requires two summer construction seasons to complete. Today, due to load requirements for 2012 and the timing requirements to

be met to be eligible for federal funding, the project must be complete by March 31, 2012 – which requires a construction start in June 2010.

Risks related to regulatory delay, capital cost increases and construction risks were outlined in the Application.

- **Regulatory risks** - exist to the extent that land based construction activities would be delayed beyond June 1, 2010, and are mitigated by the approach to permitting.
  - **Federal Decision Bodies**- the activities of federal decision bodies under the YESAA process (DFO, Transport Canada and Infrastructure Canada) have been coordinated through the Federal Agreement Management Committee to ensure timely and responses and minimize risk of conflict.
  - **Territorial Decision Bodies** – Yukon Energy has continued to consult with Territorial regulators during the YESAB Screening process to ensure any issues and concerns with the project are expeditiously addressed.
  - **Water Board** – The Water Board is not a decision body under YESAA, but the Act provides that the Water Board cannot issue a licence that is contrary to a decision document. Yukon Energy has extensive past experience before the Water Board, is aware of Water Board processes and is confident that the YESAB Project Proposal fully addresses water-related issues and concerns. While there are no guarantees that issues or concerns will not arise before the subsequent Water Board process after decision documents approve YESAB recommendations, YEC is not aware of any issues that would lead to difficulty in getting the necessary Type A amendment to its current Mayo Water Licence as required prior to initiating water-based construction in the 2011 summer construction season.

In addition to consulting with regulators regarding the project, Yukon Energy has continued to consult with NNDFN in order to ensure project related issues and concerns are discussed and, to the extent possible, addressed.

- **Construction and Contracting Approach** – A construction management approach that included early competitive selection of an MOU contractor was adopted by YEC to mitigate construction management risks related to contractor selection, price and delay. Positive outcomes to date of the

approach included early selection of a turbine/generator contractor, and considerable testing and refinement of the project cost estimate and completion of more advance preliminary design engineering.

- **Economics and Feasibility risks**
  - **Load risks** would reduce the project's expected diesel generation cost savings if the IS loads fall below the base case forecast. However, even absent Carmacks Copper load the project will continue to provide cost savings every year relative to diesel generation as noted in Figure 4 included in the Application at page 39. YDC flexible debt financing will provide further mitigation to ensure that there is no material impact on rates during the initial years of Mayo B operation, including YDC funding at no cost to YEC for the additional interest rate reductions (including cash injections through "negative" interest rate payments) required in this regard to mitigate any delays in connecting the Carmacks copper load to the grid (see Application, page 45).
  - **The delay of the Mayo Lake project** would limit the amount of available diesel that could be displaced by the Mayo B project once in service. The Application notes that the additional metre of drawdown would reduce ratepayer costs for generation that would otherwise be served by diesel by \$1.0 million per year (2012\$). However, as is amply demonstrated in the Application and in responses to interrogatories, Mayo B is fully economic without the additional metre of drawdown. Yukon Energy intends to pursue this separate project once necessary additional field studies are completed, and notes that pursuing the additional metre of drawdown will not require additional construction of infrastructure.
  - **CSTP Stage 2** – as noted in the Application, all required permits and authorizations have been obtained and survey and clearing work has commenced, and a transformer contract awarded. Funding of \$40 million has also been secured.
- **Rate Impacts** - The Application demonstrates that Mayo B will provide material ratepayer cost savings as regards diesel generation in each year over its life.
  - Average annual near term cost savings for ratepayers are estimated at \$4.3 million during the 2012-2015 period with Carmacks Copper load and Mayo Lake enhanced storage (equivalent to about 8.5% of the combined YEC/YECL

consolidated rate revenue requirement for 2009 – see pages 41-42 of Application) – this analysis ignores any flexible debt financing mitigation.

- Footnote 73 in the Application indicates annual net ratepayer savings of \$1 million remain during this near term period even without Carmacks Copper load and any Mayo Lake enhancement.
- As reviewed at page 45 of the Application, YDC flexible debt financing will ensure that over the short term the annual rate impacts will be rate neutral with Mayo B annual net generation costs recovered from ratepayers not exceeding a defined unit cost ceiling in the range of 10 to 11 cents/kWh in 2012\$.

### ***Update on Project Since Filing of Part 3 Application***

Since filing of the Part 3 Application, the following major developments are noted:

- ***YESAB Draft Screening Report issued March 12, 2010*** - Review of the draft report and discussion to date with regulators and NNDFN indicates that no major new issues have been identified by YESAB or other parties. At a high level YESAB has provided terms and conditions consistent with Yukon Energy's Application. Based on review to date, Yukon Energy sees no financial impact from the YESAB or related regulatory process that would change the Mayo B overall budget capital cost. Comments on the Draft Screening Report are due by April 12, 2010, and YEC currently sees reasonable basis to expect the YESAB Final Report Recommendation by the first week of May 2010. If this timing occurs, and subject to the timing of the YUB report to the Minister, it remains reasonable that decision documents and regulatory permits needed to start construction could be in place by the June 1, 2010 target construction start date.
- ***Construction Contract with Kiewit signed March 12, 2010*** –A construction contract with Kiewit was completed and signed March 12, 2010, and Kiewit is currently undertaking pre-construction activities to be ready for construction once permits are issued. This construction contract includes;
  1. An agreed concept design and project scope for Mayo B consistent with the Part 3 Application.
  2. An “Alliance model” open book contract arrangement where the parties commit to work together and in good faith to address issues that arise on a best-for-project basis and where the major risks to the project will be shared between

- YEC and Kiewit in accordance with the terms of the agreement. The contract includes all provisions required under the federal funding agreement, including right to audit by the Auditor General. The stipulated primary targets of YEC and Kiewit are:
- To complete the work at or below the Target Maximum Price of \$85.40 million, and
  - To complete the work in accordance with the project schedule, which includes a Commercial Operation Date of December 31, 2011.
3. Construction contract scope – wherein Kiewit is to perform the work as described in the agreement, including the specifications, to construct the Project. The contract specifies that YEC, and not Kiewit, will enter into the following contracts:
- Contract with KGS Group for preliminary and detailed engineering services for Mayo B, wherein KGS will acknowledge that YEC and Kiewit are working in an Alliance model and that KGS has agreed to provide its services to YEC in a way that contributes to the Alliance model.
  - Contract with the turbine/generator supplier for the supply of the turbines and generators for Mayo B.
  - Contract for insurance related to Builders Risk and construction wrap up liability.
4. Construction contract pricing arrangements that reflect projected costs based on Kiewit's estimated costs and contingencies.
- Contract budgets are consistent with the Table 1 Mayo B capital cost estimate breakdown as provided in response to CW-YEC-1-5(a), with a contract Base Target Price of \$77.70 million and a Target Maximum Price of \$85.40 million.
5. Project Schedule –
- Pre-construction start date activities – prior to target construction start date of June 1, 2010.
  - 2010 construction – activities that do not require any in-river activities
  - 2011 construction – completion of the Project
- ***Turbine Generator Supplier Selected January 15, 2010 (ABB) and final contract signed March 31, 2010*** – The turbine/generator is the key long lead equipment item for this project. With the assistance of Kiewit, YEC undertook a competitive process to select a turbine generator supplier. The selection process was

completed in January 15, 2010 with a Preliminary Agreement between Yukon Energy and ABB; a supply agreement was finalized and signed on March 31, 2010 with a final contract price (including Preliminary Agreement costs) of approximately \$5.04 million and schedules for delivery consistent with the Kiewit project schedule.

- ***NNDFN Project Agreement*** – Negotiations on the Project Agreement with NNDFN have reached the stage where both parties are hopeful that an agreement will be settled shortly addressing the following matters with regard to both the Mayo B and Mayo Lake projects:
  - NND investment opportunity in the Mayo B project
  - Ongoing consultations between Yukon Energy and NND related to Mayo B and Mayo Lake project regulatory reviews, permitting and specific monitoring matters
  - Principles under which NND can take advantage of contract opportunities with Kiewit
  - Funding for NND

### ***Concluding Comments - Orderly Process Going Forward***

Yukon Energy's recent 2008/2009 GRA marked the start of a new stage in the orderly resource planning process that began in 2005. This new stage requires participants now to focus on the pressing need to address new energy-based supply issues and to address rate-related regulatory priorities.

Existing hydro generation surpluses will be largely utilized within the next few years, resulting in the need to develop new renewable supply sources so that high cost baseload diesel generation, and related Green House Gas emissions, can be minimized on both the WAF and Mayo Dawson grids.

The Mayo B Application to be reviewed by the Board in this hearing provides the opportunity to reduce diesel generation in a cost effective and timely manner to the benefit of ratepayers in the near as well as the longer term.

As such, Mayo B has a clear need and justification today – but it remains as only one of several renewable generation projects that will be needed to meet future system energy requirements using renewable generation instead of diesel.

**ATTACHMENT A – REFERENCED TABLES & FIGURES FROM APPLICATION**

**Table 1  
Summary of Mayo B Project Costs and Financing (\$million)**

<b>Funding Source</b>	<b>Estimated Costs</b>	
Federal (grant)	53.35	see Note 1 & Attachment E
YDC (contributions)	30.15	see Attachment F
YEC (ratebase)	36.50	see Notes 2 and 3.
Total	120.00	

Notes:

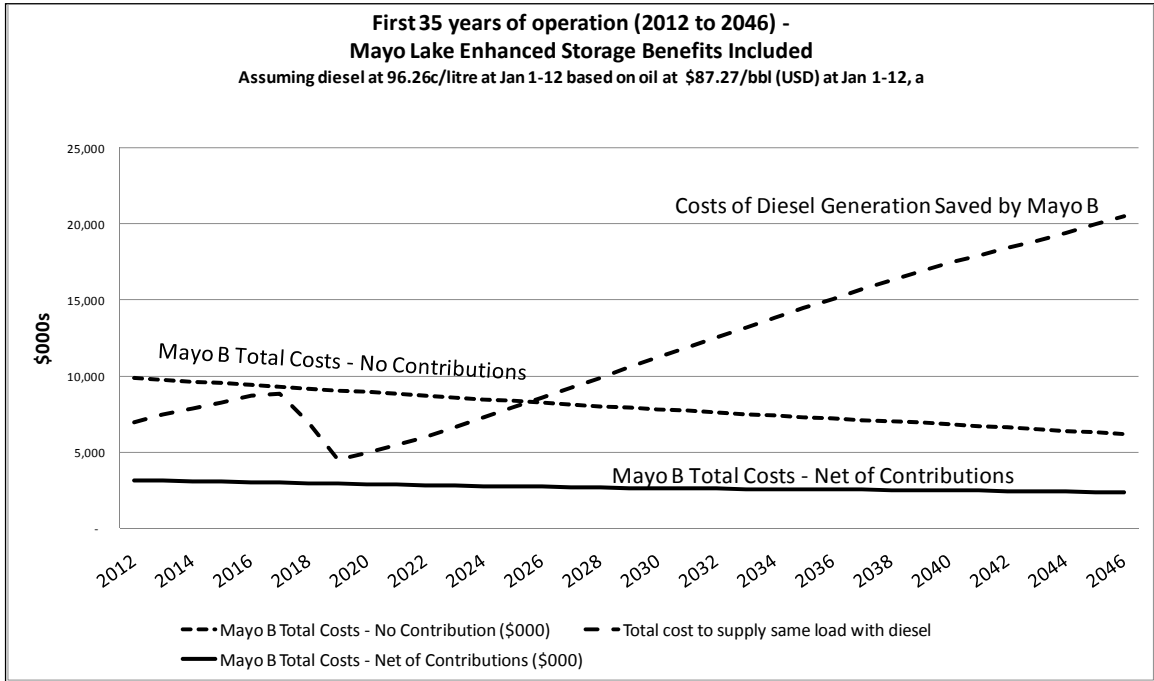
- 1 Based on 50% of "eligible costs" (excludes costs before Minister approval & various owners costs). Funding submission estimated 'eligible costs' at approximately \$106.6 million for Mayo B.
- 2 YEC sought government/industry funds as needed to keep Mayo B levelized cost of energy (LCOE) within range of 8 to 10 cents per kWh of "net generation" (generation forecast to displace diesel generation).

LCOE over 65 years at YEC 2009 GRA cost of capital [ROE 8.49%, new debt 5.28%], including operating costs and net added secondary sales recoveries, and base case forecast net generation (with Carmacks Copper mine connected by 2012) is as follows with the estimated \$36.5 million YEC rate base capital cost:

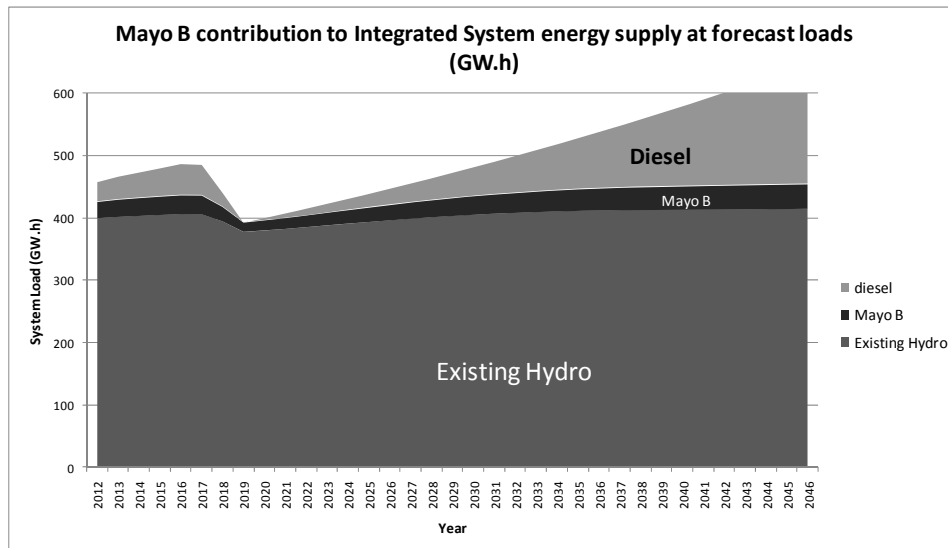
	<b>LCOE</b>	
a) Assuming 1 m added Mayo Lake storage:	6.69	c/kWh
b) Assuming no change in Mayo Lake licence:	7.59	c/kWh

- 3 Flexible debt financing with YDC will cap annual net generation costs at 10 to 11 cents/kW.h (2012\$).

**Figure 1**  
**Mayo B Annual Costs and Diesel Savings – end of 2011 ISD (\$000s)**



**Figure 2**  
**Mayo B Net Contribution to IS energy supply 2012-2036**



**Figure 4**  
**Mayo B Annual Costs and Diesel Savings – No Carmacks Copper (000s)**

