



***PUBLIC INTEREST ADVOCACY CENTRE***  
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February 26, 2010

Yukon Utilities Board  
Box 31728  
Whitehorse, Yukon  
Y1A 6L3  
Attention: Shay Smart, Executive Secretary

**RE: YUB REVIEW OF YEC'S PROPOSED MAYO HYDRO ENHANCEMENT PROJECT**

Dear Ms. Smart:

Please find enclosed the Information Requests submitted on behalf of UCG.

Yours very truly,

A handwritten signature in blue ink, appearing to read 'Michael Buonaguro', is written over a light blue horizontal line.

Michael Buonaguro  
Counsel for UCG  
Encl.

**APPLICATION BY YUKON ENERGY CORPORATION  
FOR AN ENERGY PROJECT CERTIFICATE AND AN ENERGY OPERATION  
CERTIFICATE REGARDING THE PROPOSED MAYO HYDRO  
ENHANCEMENT PROJECT**

**Utilities Consumers' Group  
Information Request No. 1**

**UCG 1-1**

Reference: Application, page 1

YEC indicates that “the planned in-service date for Mayo B of late 2011 reflects requirements of Yukon Energy’s funding agreement with the federal government for Mayo B and Stage 2 of the Carmacks-Stewart Transmission Project (CSTP) connecting the Mayo-Dawson (MD) and Whitehorse-Aishihik-Faro (WAF) grids. The timing for Mayo B also reflects the opportunity to displace diesel generation energy requirements associated with growing power loads on both grids”.

Request:

- (a) Please explain the requirements of the funding agreement with the Federal government that are determining the construction schedule of this Yukon infrastructure project.
- (b) What efforts have been taken to extend the funding agreement timeframes to allow for a more complete and thorough review of this project? Please provide all correspondence related to these efforts.

**UCG 1-2**

References: Application, page 1-2

On page 1, the application states that “while changes to the Mayo Lake operating regime (provision for an additional 1 meter of drawdown at Mayo Lake) were included in the February 27, 2009 Mayo B Project Proposal filed with the Yukon Environmental and Socio-Economic Assessment Board (“YESAB”), this component has been removed from the Mayo B project now under review by the YESAB Executive Committee. Yukon Energy amended the scope of the Project being reviewed by YESAB in order to facilitate a timely review of the Mayo B Project (absent 1 meter drawdown) and ensure the timelines required for substantial completion by March 2012 (as required by Yukon Energy’s funding agreement with the federal government) were maintained. Yukon Energy intends to proceed with licensing of the Mayo Lake enhanced storage as previously proposed with a separate Project Proposal filing with YESAB anticipated in fall of 2010”.

On page 2, the application states that “after the YESAB review of the Mayo B

Project Proposal is concluded, and the additional information requested by YESAB is available regarding an additional one metre drawdown at Mayo Lake, Yukon Energy intends to file a new project proposal with YESAB relating specifically to an additional one metre drawdown of Mayo Lake”.

Request:

- (a) Please explain whether an additional 1 meter drawdown of Mayo Lake is still a component of the Mayo Hydro Enhancement Project under review by the YUB.
- (b) If the additional drawdown is included, please explain how the YUB could make a final determination and recommendation on the proposed Mayo B project without having a complete environmental evaluation by the YESAB.
- (c) If the additional drawdown is not included, please explain what impact this would have on the rates and bills of ratepayers.

**UCG 1-3**

Reference: Application, pages 2

“Mayo B was included in YEC’s 20 Year Resource Plan 2006-2025 (the “Resource Plan”) as part of an inventory of hydro project options (see Appendix B of the Resource Plan) available to meet forecast load growth scenarios. The projects included in Appendix B of the Resource Plan represented “the primary alternatives identified based on review of the numerous studies conducted in Yukon.” Mayo B was specifically discussed as one of a group of small projects being considered (within the 5 to 10 MW range). Small hydro projects in the range of 5 to 10 MW were considered potential candidates for development under the 25 MW industrial scenario or larger (see Resource Plan, Chapter 5). These projects could also potentially be part of a development plan under the larger 40 MW scenario”.

Request:

- (a) Please explain any differences between the “Mayo B” project proposed in Appendix B of the Resource Plan and the Mayo Hydro Enhancement Project currently before the YUB.
- (b) Please provide evidence where the YUB referenced the “Mayo B” project in its January 15, 2007 Report to Commissioner in Executive Council regarding YEC’s 20-Year Resource Plan.
- (c) Please provide details of the specific review that was conducted of the Mayo Hydro Enhancement Project during the review of the Resource Plan.

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**UCG 1-4**

Reference: Application, page 2

“The business case (justification, need for and alternatives to) for pursuing the Mayo B project was reviewed during recent YEC 2008/2009 GRA”.

Request:

- (a) Please confirm that the costs associated with the proposed Mayo Hydro Enhancement Project were included as deferred costs during Phase 1 of YEC's 2008/2009 GRA and that none of these costs had been included in rate base.
- (b) Please confirm that the YUB's decision for Phase 1 of YEC's 2008/2009 GRA (page 47) indicated that there was a lack of business cases provided for projects identified in the deferred costs classification and that the YUB believed that the absence of significant and material information prevented projects like Mayo B from being declared justifiable.
- (c) Please provide details on when YEC expects to be able to proceed with a separate YESAB filing and review process to secure the required licences and approvals for Mayo Lake enhanced storage.

**UCG 1-5**

Reference: Application, page 5, 12; Application Attachment E; December 18, 2009 Letter from Minister to YUB

On page 5, the application states that the Mayo Hydro Enhancement 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".

On page 12, the application contains a table showing a breakdown of project costs and financing. Yukon ratepayers are contributing \$66.65 million and Federal taxpayers are contributing \$53.35 million of the current \$120 million estimated cost of a project expected to add 10 MW to the gross generation capacity at Mayo.

In her December 18, 2009 letter to the YUB, the Yukon's Minister of Justice stated that "Mayo B will receive up to 53.3 million dollars from the Government of Canada as part of the Canada-Yukon Energy Corporation Green Infrastructure Fund: Agreement for the Yukon Green Energy Legacy Project 2009-1012011-2012".

Request:

- (a) Please confirm YEC's understanding that for the YUB's energy generation model analysis used during its review of YEC's 20 Year Resource Plan, the YUB assumed that hydro generation in the Mayo-Dawson grid was not assumed to supply WAF loads due to line losses.
- (b) Please provide details of the electricity customer base served by the Mayo-Dawson grid.
- (c) Please explain how any single infrastructure project estimated to cost \$120 million (or \$12 million per MW) could be justified for a ratepayer base identified in (b) or even a Yukon-wide ratepayer base of less than 17,500.

- (d) Please provide illustrations of what similar projects have cost per MW and per ratepayer in other jurisdictions.
- (e) Please compare the cost per MW of the proposed Mayo B project with the cost of installing new site-specific diesel generation (estimated to be \$1.035 million per MW in the 2008-2009 GRA).
- (f) Please provide YEC's explanation of how the Federal government's contribution to the proposed Mayo B project would be less than \$53.3 million.
- (g) Please reconcile YEC's assumption of \$53.35 million contribution from the Federal government and the Minister's determination of a maximum \$53.3 million contribution from the Federal government.
- (h) Please provide details of the annual carrying costs that will be incurred by the staggered funding outlined in Attachment E to the Application.
- (i) Please provide details by cost component of costs incurred to date for the proposed Mayo B project for each historical year and estimated for subsequent years.
- (j) Please discuss the risks to ratepayers that the capital costs could exceed \$120 million.
- (k) Please provide details of how YEC determined that the proposed project would only qualify for \$53.3 million of the \$71 million available from the Federal government.

## **UCG 1-6**

Reference: Response to YUB-YEC-1-38 – YEC 2008-2009 GRA

“As noted in the Project Proposal, the Project cost estimates to date reflect a period of study oriented to confirming the technical ability to construct the Project, and the timing and configuration of major Project components. The estimates reflect activities oriented towards a “Level 3 – Feasibility” stage of study, and are subject to design refinement, and changing market conditions (including general economic conditions for construction in western Canada).

The cost of the Project is presently estimated at \$120 million (including escalation, interest during construction, and contingencies of 15% to 25% depending on the Project component). This estimate has been subjected to a preliminary third-party review. This review indicated that there may be a potential upward adjustment to the cost of up to 5%.”

Request:

- (a) Please provide a copy of the third party review of the \$120 million cost estimate.
- (b) Please confirm YEC's understanding that for the YUB's energy generation model analysis used during its review of YEC's 20 Year Resource Plan, the YUB assumed that hydro generation in the Mayo-Dawson grid was not assumed to supply WAF loads due to line losses.
- (c) For all capital projects completed over the last 15 years, currently underway or currently proposed valued at over \$1 million, please provide the original

estimated cost, the date this cost estimate was made and the final cost (or updated cost if not finished).

- (d) For all projects identified in (c), please provide the cost-benefit worksheets used by the YEC's Project Review Committee.
- (e) For all projects identified in (c), please provide details of the costs paid by any party other than ratepayers (i.e., government grants / loans, third party contributions).

### **UCG 1-7**

References: Application, page 8; Attachment B1-5 - Project Components and Options, page 5

On page 8, the application states that one of the components of the Mayo B project is "temporary construction-related facilities including a work camp for a peak workforce of 120 workers, lay down areas, a concrete batch plant, and related facilities".

On page 5 of Attachment B1-5 - Project Components and Options, the reference is to a "temporary work camp for 50-75 people for up to two years".

Request:

- (a) Please explain the difference between these two descriptions of what appear to be the same temporary structure.
- (b) Please describe what will be done with the temporary facilities purchased once the project is put into service.

### **UCG 1-8**

Reference: Application, page 9

On page 9, the application states that the MOU contract awarded to Peter Kiewit and Sons provides that if negotiations are not successful in securing a construction contract, YEC has reserved the ability to proceed with a construction tender process in early 2010.

Request:

- (a) Please provide details of efforts to secure the construction contract and the terms of that contract.
- (b) Please provide details of the results of the competitive process for the long lead turbine/generator equipment.

### **UCG 1-9**

Reference: Application, page 10

On page 10, the application indicates that "the Project cost estimates, including contingencies, have been subject to further and more detailed review" and that

the total estimated cost of the project remains at \$120 million.

Request:

- (a) Please provide a comparison of the project cost components before and after the referenced review with explanations on the cost drivers for each component. Please isolate all contingencies as a separate cost component.

**UCG 1-10**

Reference: Application, page 11

On page 11, the application states that Yukon Energy secured \$30.15 million in “no cost YDC funding” towards Mayo B capital costs.

Request:

- (a) Please provide details of the sources of revenue to the Yukon Development Corporation.
- (b) Given that Yukon Energy Corporation is regarded as a public utility owned by a Crown Corporation of the Yukon government, please provide YEC’s understanding of how a contribution to the financing of the proposed Mayo B project meets conditions within Section 5 of the *Yukon Development Corporation Act* - “the objects for which the corporation is established are to participate with the private sector in the economic development of the Yukon”.
- (c) Please explain what is meant by “no cost” given that the majority of revenues of YDC are initially recovered from Yukon electricity ratepayers.

**UCG 1-11**

Reference: Application, page 12

“Based on the estimated YEC rate base cost of \$36.5 million, Mayo B real LCOE costs to ratepayers (after government and YDC contributions) range from 6.69 c/kW.h with the enhanced Mayo Lake storage to 7.59 c/kW.h with no change to the Mayo Lake licence”.

Request:

- (a) Please provide LCOE costs and associated calculations assuming that the addition to rate base was \$89.85 million.
- (b) Please provide LCOE costs and associated calculations assuming that the addition to rate base was \$120 million.

**UCG 1-12**

Reference: Application, page 14, Figure 1

Request:

- (a) Please provide details of the data used to create Figure 1. Please provide the

- data in Excel format with notes explaining the data and its sources.
- (b) Please provide details behind YEC's assumption of the cost of incremental diesel generation (26 cents per kWh).

### **UCG 1-13**

References: Application, pages 15-16; May 31, 2007 Board Report on Proposed CSTP, page 7

On page 15, the application states, since the proposed Mayo Hydro project lies within the Traditional Territory of the First Nation of Nacho Nyak Dun, "Yukon Energy and YDC are also in the process of securing a possible investment in the Project by NND through the negotiation of a Project Agreement. Any such investment would only impact related YDC funding requirements with regard to YEC rate base costs for the Project and would have no impact on ratepayer costs".

On page 16, the application states that the "YEC and NND are in the process of completing a Project Agreement that supports the Mayo B Project and provides support for the future development of the Mayo Lake project (1 meter added drawdown). Negotiations are ongoing, and the parties are hopeful that an agreement will be finalized prior to the end of December 2009 or early in 2010".

On page 7 of its Report on the regarding the proposed Carmacks-Stewart Transmission Project, the Board stated "However, the Board recommends that any government funding for the Aishihik third turbine be applied directly to rate base before consideration of any cost overruns or potential disallowances from the Board".

Request:

- (a) Please provide an update on any investment that Nacho Nyak Dun or any other First Nation intends to make on the proposed project.
- (b) Please explain why only the project funding commitment of Yukon Development Corporation would be reduced by investment by other parties instead of reducing the investment being made by Yukon Energy Corporation on behalf of its ratepayers. Please explain the cost benefit to ratepayers of adjusting project funding commitments as proposed by YEC versus adjusting the amount that will need to be borrowed by YEC.
- (c) Please explain how YEC's proposed treatment of project funding compares to the Board's determination regarding the Aishihik third turbine.

### **UCG 1-14**

Reference: Application, page 15

"Under the terms of the Federal Contribution Agreement, substantial completion of the Project is required by no later than March 31, 2012".

Request:

- (a) Please provide details of what is meant by “substantial completion”.
- (b) Please provide details of discussions that YEC or other parties associated with the proposed Mayo B project have had with the Federal government to arrive at this definition of “substantial completion” and/or the flexibility of the March 31, 2012 deadline.

**UCG 1-15**

Reference: Application, page 18

“The Project Proposal Submission indicates that the revised Mayo B project is expected to cause no significant adverse effects on the biophysical environments (e.g., land and water environments and associated terrestrial and aquatic life) or on the socio-economic components (e.g., resource and other land use, economy (including local employment and training and local business), and social components including infrastructure and services, traffic, heritage sites, community and family life, and worker health and safety”.

Request:

- (a) Please confirm that the YUB is to review the environmental, socio-economic and social components of the proposed Mayo B project in order to fulfill the Minister’s direction to provide recommendations on the “potential benefits, costs, risks and customer Impacts that Influence whether Mayo B should proceed as proposed by YEC”.

**UCG 1-16**

Reference: Application, page 21

“The technical, economic and financial feasibility of proceeding with the Project at this time is confirmed by review of forecast WAF/MD grid baseload diesel generation requirements that will be displaced by Mayo B, by the engineering and other studies conducted to establish the Project’s components and estimated costs and expected timelines, and by the material federal and YDC no cost funding contributions now committed to the Project. Review of alternative means to carry out the Project, as well as alternatives to the Project, confirm that Mayo B, as proposed, is also the optimum development for Yukon Energy to proceed with at this time”.

Request:

- (a) Please provide copies of all technical, economic and financial feasibility studies undertaken for this proposed project.
- (b) Please provide a copy of all engineering and other studies conducted to establish the proposed project’s components and estimated costs and expected timelines.
- (c) Please provide a copy of the reviews of alternatives to the proposed project.

## **UCG 1-17**

Reference: Application, page 24

“The requirement to proceed with Mayo B at this time is not directly tied to the timing of a specific emergent industrial load (such as Minto mine in the case of CSTP Stage 1) but is defined by the opportunity available, with ongoing non-industrial load growth plus the existing Minto and emergent Alexco mine loads, to secure low risk and cost effective assets for the near term as well as long term benefit of ratepayers due to federal and other funding commitments to provide for hydro generation infrastructure enhancements (as well as for completion of major grid interconnection) with minimal risk and reduced costs to ratepayers”.

Request:

Please confirm that the need to proceed with the proposed project is not driven by the electricity needs of current ratepayers.

## **UCG 1-18**

Reference: Application, page 35

“Throughout this review process Yukon Energy has been working in consultation with stakeholders, such as NND, as well as regulators (e.g. DFO) to ensure any issues or concerns with the Project are addressed expeditiously”.

Request:

Please provide copies of meeting notes and other materials related to the referenced consultations.

## **UCG 1-19**

Reference: Application, page 38

“Yukon Energy is working in consultation with regulators (such as DFO) and stakeholders (such as NND) to ensure any environmental or other issues and concerns related to the additional metre of bottom storage at Mayo Lake are addressed in order to ensure this operational enhancement is available as soon as possible, preferably before Mayo B is in service”.

Request:

Please provide descriptions of all issues and concerns identified as related to the bottom storage at Mayo Lake.

## **UCG 1-20**

Reference: Application, page 44

“To address potential short term annual rate impact concerns flowing from the Project, YEC has defined an annual “unit cost ceiling target” for Mayo B at the cost level per kWh for Project net generation in year 1 (escalating at inflation for subsequent years) that would mitigate upward pressure on near term rates (absent consideration of the benefits secured from diesel generation cost savings). This unit cost ceiling target has been set at 10-11 cents/kWh in 2012 (rising with inflation) based on assumed average Major Industrial rates to be applied in 2012”.

Request:

- (a) Please provide a copy of the fully allocated cost of service study used to determine the average major industrial rates referenced as the unit cost ceiling target.
- (b) Please provide illustrations from other jurisdictions where this method of mitigation has been used in the past.

**UCG 1-21**

Reference: Application, page 45

“To mitigate potential annual rate impacts in the initial years of Mayo B operation, and to ensure annual per kW.h costs are held within the defined unit cost ceiling during this period, YEC will arrange flexible debt financing with YDC for Mayo B similar to the current YEC flexible term debt long term loan arrangements related to Whitehorse #4 generating unit”.

Request:

Please explain how the proposed debt financing maintains the 60/40 debt/equity structure of YEC and how ratepayers will not ultimately be paying more for the proposed project over the long-term.

**UCG 1-22**

Reference: Application, page 47

“The third stage of consultation focused on Project Effects and Mitigation. Consultation activities were conducted with FNNND, the Village of Mayo, MDRRC, community members from Mayo including private landowners and resource users, NGOs and various government departments”.

Request:

Please explain how the referenced consultation (or any other consultation on the proposed project) aided the decision making process for any electricity ratepayer outside of the Mayo area,

**UCG 1-23**

Reference: Application, page 47

“Upon entering into a cooperative engagement process with NND, Yukon Energy proceeded with meetings with the NND Lands and Resource Department, the NND Project Agreement Working Team, and with the broader community to inform them of the Project”.

Request:

Please provide copies of all notes and presentation materials related to the referenced meetings.

**UCG 1-24**

Reference: Application, page 48

“Yukon Energy is continuing consultation with FNNND and regulators during the YESAB assessment phase. A second Contribution Letter of Agreement with FNNND was agreed to in August 2009 to enable their participation in the YESAB reviews and project-related consultation on the Mayo B Project. Yukon Energy has established a Technical Working Group (TWG) with representatives from FNNND to work through various technical matters of interest to both parties (e.g., on-going development of a lower Mayo River monitoring plan, issues related to the future Mayo Lake Enhanced Storage Project); and a Project Agreement main table to conclude discussions on a Project Agreement”.

Request:

- (a) Please provide copies of all Contribution Letters of Agreement with FNNND.
- (b) Please provide copies of all notes and presentation materials related to the meetings of the Technical Working Group.
- (c) Please explain what is meant by a Project Agreement main table and its function.

**UCG 1-25**

Reference: May 31, 2007 Board Report on Proposed CSTP, page 9

“The Board's view is the same as that expressed in the YEC 20-Year Resource Plan Report, that is, YEC should not pursue Stage Two of the CSTP unless there is a firm commitment to connect a new mine load, and under the condition that ratepayers would not be adversely affected.

Although the project was identified in the 20-Year Resource Plan, insufficient information has been provided with respect to this stage. The conditions for the Board's recommendation from the January 15, 2007, report have not been met. Based on YEC's evidence" and the commitment from the Government of Yukon, the Board considers that an additional condition should be added -that being, Stage Two should only be committed without any adverse impacts to other ratepayers.

The Board recommends that Energy Project and Energy Operation Certificates

not be issued for Stage Two until such time as the above two conditions are met (there is a firm commitment to connect a major industrial load such as the Carmacks Copper Mine and there will be no adverse impacts to other ratepayers). When the conditions are met, the Board recommends that a joint Part 3 and PPA process take place. As there is some overlap of issues between a Part 3 and a PPA proceeding, the Board considers that a joint process would be more efficient. Further, the Board recommends that in the future, more time be provided for this process. This could also allow for the possibility of a written proceeding, which should be less costly”.

Request:

- (a) Please provide details of any firm commitments to connect new industrial load to the Mayo system before or after the proposed project is put into service.
- (b) Please explain how ratepayers will not be adversely impacted by the proposed project when the proposed mitigation measures simply delay the recovery of project costs over a longer period (with carrying costs) and the potential risks (schedule risks, capital cost escalation risks, risks of major design modifications resulting from regulatory processes, etc.) that could adversely impact ratepayers .
- (c) Please outline the decision points in the Mayo B work plan where YEC will evaluate whether it is prudent to proceed with the next step(s) of the proposed project in order to manage project risk.

**UCG 1-26**

Reference: Application, Attachment A2, page 3

“The construction of the proposed Project is contemplated to occur concurrently with Stage Two of the Carmacks-Stewart Transmission Project (CSTP), a project previously reviewed by the Executive Committee of YESAB. CSTP will complete the 138 kV connection of the Mayo Dawson and WAF grids. Stage One of that project was completed in November 2008 and connected the Minto copper mine and Pelly Crossing to the WAF grid immediately displacing over 30 GWh per year of diesel generation with surplus hydro generation.

Request:

- (a) Please confirm when Stage 2 of the CSTP will undergo a Part 3 review similar to the current proceeding for the Mayo B project.

**UCG 1-27**

Reference: Application, Attachment A2, page 3

A decision to not proceed with the Project or any other renewable generation enhancement project in Yukon, would be expected to result in the following:

- The Yukon power systems will experience ongoing growth that cannot be served from existing renewable power sources. Consequently, given Yukon Energy’s general obligation to serve customers who request

service within its franchise area, the utility will be required to utilize non-renewable generation to service the loads, almost certainly diesel generation.

- Long-term power costs in Yukon will not benefit from the enhanced stability associated with capital intensive renewable power generation such as increased hydro (and that accordingly would occur with Mayo B). This would likely lead to materially higher power rates over time than would be the case with the Project, and separately may lead to more industrial customers electing to generate their own on-site power with fossil fuel generation rather than connect to the grid.
- Ongoing diesel generation in Yukon that arises, which could otherwise have been displaced by the Project, will generate approximately 700 tonnes of GHG emissions per GW.h of electricity generated.
- Economic development opportunities that could be realized from the project will not occur.

Request:

- (a) Please provide details of the likelihood that the growth in electricity demand in the Mayo area will be anything but minimal.
- (b) Please provide details of the analysis used to determine that “materially higher power rates” would occur without the proposed Mayo B project.
- (c) Please confirm that on-site generation would be a viable alternative to the proposed Mayo B project for any industrial load that may only exist for a limited life (e.g., 7-10 years) of a mine.
- (d) Please provide details of the “economic development opportunities that could be realized” only because of the proposed Mayo B project and without any of the alternative electricity supply options available.

**UCG 1-28**

Reference: Application, Attachment A1

Request:

Please provide a map identifying all current and proposed transmission lines in the Yukon as well as current and potential industrial customers.