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Ms. Susan Yurkovich  
Executive Vice-President, Site C Clean Energy Project  
BC Hydro  
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December 4, 2014

Dear Ms. Yurkovich,

**Re: Site C Clean Energy Project - Project Review**

Further to our meeting today, I would like to follow up and to provide some additional context around our cost estimate process reviews. This context is around observations on four key elements that made up the Site C Project team's cost estimate and due diligence process.

1 Basis of Estimate

KPMG first carried out a review of the estimating process on the Site C Project in 2011 prior to the start of the regulatory process. This review was on the approach to developing the 2010 cost estimate, the basis of which was already the culmination of the information and designs that had evolved over many years. This 2010 estimate was based on a preliminary design level of information that was then costed along the lines of a construction style bottoms up estimate.

As you know, I have 30 years experience advising on large-scale projects undertaken by the public sector. In preparing their estimate, the Site C team used methods normally used by a Contractor. In my experience this is unprecedented for a pre-contract estimate let alone a pre-regulatory estimate.

Since the 2010 estimate, KPMG performed another thorough review of the 2014 cost estimate process and again we found the extensive process exemplary. Further independent review of the design and constructability inputs has occurred, and BC Hydro has also had an independent estimating review performed by retired experienced contractor estimators, in addition to a comprehensive value engineering (VE) process. The VE is a common practice that has been used successfully in many other capital projects. However, the contractors' bottoms up peer reviewed estimate is not and should provide a higher confidence in the estimation of the direct capital costs.

- 2 Expert Estimator Panel - the expert panel of construction estimators that independently reviewed the major components of the estimate was again a level of diligence that increases the confidence of the estimate compared with other capital projects. This panel looked at the reasonableness of the multiple inputs that are used to estimate any one item of work that included breakdowns of:
  - Labour – including varying skill levels, rate, resource allocation, productivity etc.
  - Equipment– including cost, types used, usage, downtime, maintenance etc.
  - Material – including supply, delivery handling and bulking factors etc.

The level of detail of this panel review was comprehensive and was performed by reviewing backup information and interviewing the estimating team. They concluded that the direct cost was reasonably conservative through a bidding contractor's viewpoint, and if they were to bid for the packages at the time felt that they could find efficiencies in the estimate. This process provided additional confidence in the direct cost component of the estimate.

- 3 Risk Review Process - in reviewing the risk review process it was evident that the project team had done a good job at looking at the impact of delay to the project and the risks that could affect the success of the project. The team had also built in mitigation strategies to deal with many of the risks and a process to ensure that the strategies are incorporated into commercial and management processes going forward. KPMG worked with Partnerships BC to ensure that the approach in assessing and valuing risks on the Site C project was consistent with the standard approach developed and implemented on other Government projects.
- 4 As discussed in our Commentary letter dated October 20, 2014, it is reasonable to contain an allocation of a management reserve on a project of this size and complexity that will address unforeseen events that occur outside the control of the project team, such as, unforeseen ground conditions, extreme natural events etc. Based on input from the project team and our experience with other projects adopting a management reserve of at least 5% of the direct costs would be a reasonable practice.

Regards,



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