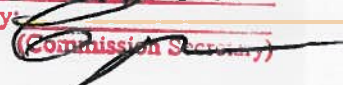


EXHIBIT NUMBER: Wep. 001  
File Name: Bipole III  
Date: Nov. 1, 2012  
Received by:   
(Commission Secretary)

**Manitoba Clean Environment Commission Bipole III Public Hearing**

presented by:  
Will Tishinski, P.Eng.  
Vice-President, Power System Planning, Manitoba Hydro (retired)  
November 1, 2012

My name is Will Tishinski. My entire 36 year working career was spent with Manitoba Hydro, the last 9 years as Vice-President. Most of my years were involved in the planning and operating of generating stations and high voltage transmission lines. I hold Bachelor and Master Degrees in Electrical Engineering from the University of Manitoba. I make this presentation as a private citizen and not on behalf of any organization.

It's a travesty that the scope of this CEC Hearing has been made so restrictive that no review can be made of reliability nor of the NFAAT (need for and alternatives to) the Bipole III project.

Manitoba Hydro spent the better part of the afternoon of the first day describing the catastrophic consequences of an outage of the existing DC transmission lines and explaining the need for Bipole III. Reliability was advanced as the primary reason for construction of this line. Despite all of the arguments for reliability, that topic was ruled out of scope. It is incredible that the project's most important purpose has been eliminated from the review process.

Likewise, elimination of an NFAAT review prevents any discussions of the alternative route on the east side of Lake Winnipeg. Any major project should be able to withstand the tests of an NFAAT review.

The crucial need for having an NFAAT review is best understood by reviewing the history of Bipole III.

Ever since Bipoles I and II were placed in service, Manitoba Hydro recognized that Bipole III would be required at some future date. In the early 1990's, when a sale to Ontario was in place, Hydro began planning a route for Bipole III on the east side of Lake Winnipeg. The professionals within Hydro considered all of the relevant issues involved in planning a transmission line, including technical, economic, reliability, environment and social.

Later when Hydro established a need for Bipole III for Manitoba's own needs it stayed with the east-side option. This plan initially called for a line only and no conversion equipment. Hydro had the right plan! Aboriginal consultations and route selection process commenced and continued for several years.

In 2004, the Government of Manitoba asked Hydro to cease work on the east side. Reason given was that the province intended to apply to UNESCO for a heritage site designation of some 43,000 square kilometres (km<sup>2</sup>) of forest on the east side of Lake Winnipeg. There was also a concern over the habitat disruption for woodland caribou in the area. Hydro professionals reviewed these reasons and deemed them insufficient to cause a costly re-routing. Their extreme concern was documented in reports written in December, 2004 and January, 2005. These reports were presented to Hydro's Board and eventually leaked to the public. Undaunted, the Government directed Hydro to abandon all work on the east side. The east side was no longer an option! The remaining option for the line was a route on the west side of the province near the Saskatchewan border.

After an approximately two-year period, engineering studies discovered a shocking engineering condition. The west-side route, which was some 54% longer than the east side, would not work in conjunction with the existing bipoles. Costly conversion equipment was needed. The conversion equipment requirement was a crucial revision to the engineering plan. This discovery figuratively threw a monkey wrench into the Bipole III plan. What started off as a perceived simple rerouting of a transmission line, exploded into a costly engineering revision.

The prudent course of action would have been to put the line back to the east side. Government stubbornly refused. It reminded Hydro the east side was not an option. At this juncture the project essentially fell off the rails.

Hydro now had to find a way to help pay for the costly conversion equipment. The electrical demand growth within Manitoba was modest and a steep increase in costs could not be absorbed by Manitoba rate payers. The obvious solution was to acquire new power sales to the United States to help pay for the conversion equipment.

In April, 2008, a Government announcement was issued that 500 MW of power had been contracted with Wisconsin Public Service, accompanied by a new transmission line to the States. This announcement simultaneously triggered a spin by Government, that the Americans, not Manitobans, would pay for the additional costs of Bipole III. This spin will be addressed later.

Now facing the Government's 54% longer west-side line, plus the addition of conversion equipment Hydro made a quick re-estimate of the project cost. A new cost of \$2.247 billion for Bipole III, was entered into the 2007 financial plan.

Hydro commenced to work actively on many fronts, including work to obtain more detailed costs.

For several years the cost of Bipole III remained constant in the financial plan. Then rumors surfaced that the costs had risen significantly to \$4 billion. Knowledge of the new number was

vehemently denied by Government and Hydro's CEO as recently as December, 2010. At about the same time, a report was leaked from Hydro, signed off by the two most senior engineering vice-presidents within the corporation, confirming the new number of \$4 billion for Bipole III.

While a debate was raging in public about the project cost, retired Hydro executives and university professors, using data from leaked reports, calculated the additional cost of the west-side route as being \$1 billion. This \$1 billion number pertained only to the line and had nothing to do with the converters. It was a present-value calculation that took into account the cost of the additional line length, increased losses, and reduced security.

Hydro was now confronted with a troublesome issue whereby the total project cost mushroomed from \$1 billion to \$4 billion. And sadly, but coincidentally with the astronomical cost increase, we get reduced transmission capability, reduced security, increased losses, and increased environmental and agricultural impact.

Confronted by such a dramatic increase in the project cost, the CEO of Hydro rejected the estimates prepared by his own engineers and hired an outside consultant to review the estimate, hoping for a lower cost. In March, 2011 the consultant submitted a lower estimate of \$3.28 billion, which now stands as the official estimate.

The lower estimate contributes nothing towards lowering the power rates. Rates will be determined by the true cost, which will be known when line construction is completed and work orders closed out.

I am personally convinced the Hydro engineers' estimate will be proven to be correct. They have 40 years of experience with DC transmission and more years of proven methodology for estimating costs.

There has been much political chicanery since the Government directed Hydro to build the line on the west side.

Initially, Government had claimed there would be "mass deforestation" of the boreal forest if the line was built on the east side. Not true! If the line were routed through the narrowest points, the cleared right-of-way in the boreal forest would be no more than 150 km in length. The cleared area would be less than 10 km<sup>2</sup>, out of the total 43,000 km<sup>2</sup> proposed for the UNESCO site. This is equivalent to cutting 10 trees out of 43,000. Some proponents of the east-side line have called the line through the forest nothing more than "a thread on a football field" which is a good analogy. There would be no "mass deforestation".

Another Government representative stated that the reason the line was being built on the west side was so that we could sell power to Saskatchewan. Nonsense!

DC transmission is used for point-to-point transmission and nobody would build a costly converter station (over \$1 billion) to sell a small amount of power for which transmission already exists.

The next spin was that Americans would pay for the additional cost of the west line and it would not cost Manitobans a cent. Not true again! Purchases by American utilities are based on least-cost alternatives, not Manitoba costs. If a cheaper line is built on the east side, the savings becomes pure profits for Manitobans.

Another spin was that, if we damage the forest on the east side the Americans will not buy our power. American legislation was passed to purchase clean hydro power, but nothing is said about locations of transmission lines.

An NFAAT review, with expert witnesses testifying under oath, would have clarified all of these points and eliminated public confusion surrounding the project. The review would have also have shed light on a number of other outstanding issues. Here are some of the more notable.

Since the line is being rerouted to preserve the forest on the east side of Lake Winnipeg, in order to enhance UNESCO heritage designation, we need to see a business plan for the heritage site. It is claimed by the heritage site proponents that huge eco-tourism benefits will flow when this forest receives its designation. No business plan has been prepared to illustrate the claimed benefits. We don't know if all the eco-tourist revenue will come from a Banff-style operation or from leaving the forest in a pristine wilderness state.

If tourism revenues are to be derived from an operation such as at Banff, then we must have development of roads, service stations, hotels, night clubs, sewage lagoons, etc. This kind of infrastructure is far more intrusive than any transmission line. On the other hand, if we leave it as a wilderness area, then how is it possible to derive all the eco-tourism benefits? A billion-dollar decision was made without back-up information.

Regarding disruption of the woodland caribou, a road with its traffic will kill more caribou than any transmission line.

Another issue that needs to be reviewed is the in-service date. When the west-side line was announced, the in-service date was pegged at 2017. Since that time, our economy has changed dramatically. A recession has struck North America. Hydro's load growth has decreased, the American economy has softened, as evidenced by the Wisconsin Public Service sale reduction from 500 MW to 100 MW, natural gas prices are lower and a host of other parameters have changed.

A project delay is not new to Hydro. In 1976, construction of the Limestone station was started and then stopped two years later because of a reduction in the predicted electrical demand.

Construction was resumed in 1985 and, fortuitously, the plant came in under budget, concurrently with profitable American export contracts. It would be prudent to re-examine the Bipole III in-service date.

Hydro also seems to be paralyzed in its creativity. With the Government ostensibly doing all of the planning for Bipole III, it appears as if Hydro is so intent in pleasing its political bosses, there is no attempt to minimize the west-side line costs. Significant cost savings opportunities exist with a re-examination of the preferred location for the receiving-end converter station, which is currently at Riel.

The Riel station location was established with the expectation Bipole III would approach Winnipeg from the northeast side. Given that the line will now approach the city from the southwest side, it makes economic sense to consider moving the converter station to the southwest corner of Winnipeg. The line length could be shortened by 120 km leading to an immediate saving of at least \$120 million. The shortened line would also give us increased security, reduced losses and avoidance of negative environmental impact on valuable farmland south and east of Winnipeg.

The restrictions placed on this Commission by the Government have prevented any investigation of these and other important aspects.

But the greatest tragedy of all is that the environmental impact of the east-side line is not compared to the west-side line because any discussion of the east side has been ruled out-of-scope. The severe restrictions placed on this Commission have not served the public interests at all.

The only rationalization I can offer to the process, and the Bipole III saga, as it has unfolded, is linked to the adage "no person is totally useless; he can always serve as a bad example".

Likewise, this line, with all its inferior qualities, will also serve as a bad example. For the next 100 years, future generations will gaze at the towers and ponder how it happened that reckless politicians built this crazy west-side line instead of the vastly superior east-side line, as proposed by experienced, competent professionals within Manitoba Hydro.

...the ... of ...

...the ... of ...

...the ... of ...

...the ... of ...

...the ... of ...

...the ... of ...