

**DIRECT EXAMINATION WITH RESPECT
TO THE KUBURSI-MAGEE REPORT**

- QUESTION AREAS

May, 2011

1(a) **Would you please provide your CV?**

DR. MAGEE:

BMath Hons from U of Waterloo, 1979

PhD in Economics from U of Western Ontario, 1984

Chair of Graduate Studies Committee, Dept. of Economics, 2001-2004,
2007-2011

Member of Ontario Council of Graduate Studies committee panel, 2008-2010

DR. KUBURSI:

BA Economics, American University of Beirut 1963

MSc. Economics and Statistics, Purdue University, 1966

PhD Economics and Statistics, Purdue University, 1969

Acting Undersecretary General, United Nations, 2006/07

Acting Deputy Executive Secretary, UN-ESCWA, 2006.

Chief, Economic Analysis Division, UN-ESCWA, Beirut, 2003.

Senior Economist, UNIDO, Vienna, 1982

Senior Academic Visitor, Faculty of Economics and Politics, Cambridge UK,
1974/75.

Publications in Canadian Journal of Economics, International Public Finance,
Public Finance Quarterly, Journal of Macroeconomics, Journal of Regional
Science, Journal of Socioeconomic Planning Sciences, Canadian Journal of
Regional Science, International Journal of Forecasting, Energy Economics,
Simulation, Modelling and Decisions in Energy Systems, Journal of Development
Economics, Journal of Developing Areas, Industry and Development, Modelling
and Simulation, International Journal, Journal of Energy and Development,
Economie Appliquee, EcoDecision, Transportation Research Record, Journal of
Development and Economic Policies and the Encyclopaedia of Environment
Management.

The assignment required researchers with multiple competencies in varied areas
extending from strong familiarity with economics to deep knowledge of production
systems, optimization, water modelling and statistics.

(full C.V.'s found as schedules to PUB/KM-1)

1(b) **Where are you currently employed?**

DR. MAGEE:

Department of Economics, McMaster University

DR. KUBURSI:

I am currently Professor Emeritus of Economics, McMaster University and I also teach as an Adjunct Professor in the Arts and Science Program at McMaster University.

I also serve as President of Econometric Research Ltd. of Burlington Ontario, a management consulting firm that specializes in impact analysis, statistical systems, economic modelling and forecasting and software development of Decision Support Systems .

1(c) **Would you please review the highlights of your CV**

DR. MAGEE:

PhD in Economics from U. of Western Ontario, 1984

Publications in top economics and statistics journals: *Econometrica*, *Journal of the American Statistical Association*, *Journal of the Royal Statistical Society*, *Journal of Econometrics*

Chair of Graduate Studies Committee, Dept. of Economics, 2001-2004, 2007-2011

Member of Ontario Council of Graduate Studies Committee panel, 2008-2010

DR. KUBURSI:

I received my MSc. and PhD degrees in Economics and Statistics from Purdue University in Lafayette Indiana, USA in 1966 and 1969, respectively. My undergraduate education was in Beirut where I received a BA in Economics from the American University of Beirut in 1963 and completed simultaneously three years of Law at the Lebanese University.

I also served as the Acting Executive Secretary, a post that is at the Undersecretary General level and as the Acting Deputy Executive Secretary of the United Nations Economic and Social Commission for Western Asia in 2006, 2007 and 2008. In 2002, I served as the Chief of the Economic Analysis Division of ESCWA and as Senior Development Officer at the United Nations Industrial Development Organization (UNIDO) in Vienna, Austria in 1981.

I have a long career as an economic consultant and I have undertaken a large number of studies for many provincial governments, the Federal government and many industries, sectors and private clients in Canada. I have also consulted with many public and private bodies abroad, particularly in the Middle East, but also in the Far East, Latin America, and Europe.

I also taught economics at Purdue University in Indiana, USA, between 1964 and 1969, St. Joseph College, Rensselaer Indiana between 1967 and 1969, was Senior Academic Visitor at Cambridge University, UK in 1974/75, and lectured and consulted at Harvard between 1989 and 1998 in the Institute of Social and Economic Policy, JFK School of Government.

I have over 150 publications in refereed international journals, as chapters in scholarly books, conference proceedings and/or as technical reports. I have five published books.

1(d) I would then request that Dr. Kubursi and Dr. Magee be certified as experts in the following areas:

- (i) Econometrics, Statistics, including time series analysis
- (ii) Economics, production systems, risk analysis and optimization models.

2. **Would you describe how you came to be retained by the Public Utilities Board of Manitoba?**

DR. KUBURSI:

I was interviewed in mid-January 2010 (January 19th) by the Public Utilities Board in Winnipeg for the post. I was nominated to PUB by Mr. Roger Cathcart with whom I had worked when he was associated with PricewaterhouseCoopers on several studies. I was invited to Winnipeg for the interview which also entailed making a presentation on Enterprise Management and fielding questions from PUB members and its Counsel. I was selected to undertake the study by late January 2010.

DR. MAGEE:

My colleague in the McMaster Department of Economics, Atif Kubursi, described the project and asked me if I would be interested in joining him. It sounded interesting, so I agreed.

A meeting was held with the Public Utilities Board on April 26, 2010. The terms of reference were then provided together with a copy of PUB Order #30-10. It was on the basis of terms of reference of Order # 30-10 on which their work proceeded and their report was prepared.

3. **Your report has been marked as an exhibit in this hearing. If you would refer to that report now, please describe how it came to be prepared with respect to:**

- 3(a) **Your evaluation of the terms of reference? That is, in terms of reference, what were you called upon to do?**

DR. KUBURSI:

- provide evaluations and suggestions regarding Manitoba Hydro ("MH")'s risk management issues.
- as someone trained in economics and statistics, I see my main opportunity to contribute to the proceedings through evaluating MH's risk governance systems and strategies, quantification of risk, MH's

operational and planning models, pricing options, investment decisions, and MH's overall business performance.

DR. MAGEE:

- provide evaluations and suggestions regarding MH's risk management issues.
- as someone trained in statistics and econometrics, I see my main opportunity to contribute to the proceedings through suggesting statistical methods for dealing with uncertainty, for example in future waterflows.

3(b) Please describe the initial steps you took, and when?

DR. KUBURSI:

Following my selection to undertake the independent review of risk management issues associated with MH in January 21, 2010, I proceeded to review the literature on public utility economics, risk best practices, risk assessment models, MH structure and activities, models and systems, MISO structure and procedures, etc. I discovered quickly that it would make good sense to have Dr. Lonnie Magee to assist me in this very challenging and highly technical area. Dr. Magee is a highly renowned econometrician and statistician with deep knowledge of economics. He joined me in February 2010.

We both reviewed the terms of reference and frankly I had to persuade Dr. Magee to join me given his heavy teaching load and being the Chair of Graduate Studies Committee at McMaster.

We both defined and delineated the areas that we can deal with separately and jointly in February 2010 and started our research and evaluation process using the terms of reference as a guide.

DR. MAGEE:

In February and March 2010, I read material from MH's general rate application and Economic Outlook 2009-2030 documents, and met several times with Atif Kubursi.

3(c) Please describe in detail the further steps you took, including people you contacted and the work you carried out?

DR. KUBURSI:

- A)** I travelled alone to Winnipeg between February 8-11, 2010 and met extensively with PUB and MH. Specifically, I met the Chair of PUB, Mr. Bob Peters PUB Counsel, Mr. Singh, the Executive Director of PUB, and Messers Buher and Cathcart, PUB consultants. I met repeatedly with Ms. Ramage, Counsel of MH, and with Ms. Lynn Wray (VP), Ms. Gelendenan, Messers Lloyd Kuczak and Louis Kessler.
- B)** I came back alone also in March between 15-19, 2010. I met then with Ms. Denise Hickson and Mr. Don Devianne from Risk Management, Mr. Vince Warden (SVP), Mr. David Cormie (Senior Manager of Power sales), Mr. Ken Adams (SVP), Ms. Joanne Flynn, Mr. Harold Surminki, Mr. Terry Miles (SPLASH), Mr. Kevin Gawne (HERMES), and Ms. Lindsay Melvin (PRISM).
- C)** I returned in April (25-29, 2010) with Dr. Magee and met with PUB and its consultants and met also with Mr. David Cormie (many times), Mr. Vince Warden, Mr. Don Devianne, Ms. Denise Hickson, Ms. Melvin and Ms. Mortimer, Mr. Gawne, Mr. Terry Miles, Mr. Harold Surminski, Ms Joanne Flynn, Mr. Louis Kessler, Mr. Lloyd Kuczak, Ms. Lori Morrison, Ms. Elke Banting, Mr. Ian Page, Mr. Tyler Young, and Mr. Andre Penner. During the same trip, we visited the Control Centre and met with Mr. Lorne Midford, Mr. Ed. Blaine and Ms. Maria. (We also discussed the MOST system with them covering its structure, objectives and results.)
- D)** On May 4th, 2010 I travelled to St. Louis where I met Dr. Michael Proctor (a nominated consultant by MISO) to review issues regarding MH in MISO.
- E)** Lonnie and I came to MH's seminars between May 31- June 2 and attended several meetings with the modellers and risk managers.
- F)** I returned on July 15-17, 2010 to Winnipeg and met with Messers Buhr and Cathcart to discuss MH financial data and the structure of the IFF in the hope that I can model it and capture its inner workings in a DSS software.
- G)** On August 30th, 2010 Mr. Cormie visited with Lonnie and I in Burlington and explained at length the Contract strategy of MH, pricing, curtailment provisions, transmission, etc.
- H)** Then we wrote our Report in November 2010 and spent considerable time in December and early January 2011 responding to Irrs.

DR. MAGEE:

In March and April, I read background material such as the ICF report, and general literature on enterprise risk management and hydrological forecasting.

During April 25 -29, I visited MH and met with many people there.

During May 31-June 2, I attended the MH workshop sessions and attended several other meetings.

During June and July 2010, I worked on the statistical methodology and programming for chapter 4 of our report, and some initial writing. I did more *programming, analysis, and writing during October and November 2010.*

3(d) **Please review your course of contacts with the New York Consultant?**

See appendix A

DR. KUBURSI:

On June 6, 2010 I travelled with Mr. Gavin Wood to New York to meet with the NYC after a long drawn process of negotiation and persuasion that Mr. Wood had initiated with her. We had two days of meetings where we tried to give NYC the chance to share with us her concerns and her arguments. The first day was very productive and she was open about some of her ideas. I made the mistake of mentioning that "Lonnie and I" were thinking of integrating the MH models into a common platform. She misconstrued that to mean that we are building an alternative to the model she has been trying to sell unsuccessfully to MH and all went downhill from there on. To be fair, she was never open about her calculations and/or methodology. She was reticent to reveal anything that she thought represents her intellectual property. She revealed in the process a number of issues and problems that she thought MH could deal with but albeit at a very high level of resolution. She was not specific about any particular issue. She made many critical statements about risk governance, long term contracts, inadequate risk capital reserves, mismanagement of water reserves, avoidable losses, and many more trivial points. Again at no time was she prepared to delve into the nitty gritty of her calculations and procedures. At times she would quote a number but at no time was she willing to share with me how she arrived at these estimates.

3(e) **Experience with her?**

DR. KUBURSI:

NYC is very bright, evidently with strong scientific background and clearly with experience in risk analysis. She is, however, very reticent to share ideas and very careful not to reveal anything she considers to be her intellectual property. She is also very determined to market her knowledge and systems and very careful not to allow others to encroach on what she believes is her domain. She is prepared and

does not hesitate to pronounce judgment and opinions on many issues involving MH strategies, policies and practices but very unwilling to demonstrate her knowledge and open up her methodologies and calculations for scrutiny and review. Mr. Wood and I tried repeatedly to provide her the chance to share her ideas and calculations with us. She apparently felt that Dr. Magee and I are her competitors despite all the assurances that we both tried to convey to her of our willingness to sign confidentiality agreements and refrain from using any ideas that she shares with us for private gain.

3(f) **What other persons other than MH employees and the NYC did you have contacts with and/or interview? Did this include any representative of MISO?**

We came again together several times to Winnipeg. In May (between May 30th and June 3rd, 2010) to attend the Conference held at MH headquarters where MH Senior Staff took us through the major structure and operations. We also took advantage of the visit and met with CAC (Mr. Byron Williams and Ms. Myfanwy Bowman) as well as with MIPUG (Mr. Antoine Hacault and Patrick, and Mona) and RCM/TREE (Mr. Bill Gange, Peter and Josh). We also spent very productive time with Mr. Larry Buhr and Mr. Roger Cathcart and reviewed with them a number of issues and discussed particularly data and calculations of water levels and water storage.

On May 4th, 2010 AK travelled to St. Louis where he met Dr. Michael Proctor (a nominated consultant by MISO) to review issues regarding MH in MISO. AK returned on July 15-17, 2010 to Winnipeg and met with Messers Buhr and Cathcart on financial data and the structure of the IFF.

4. **Would you please describe the steps you took in terms of independent research, or other forms of work in progress that had to be carried out prior to your preparation of the report?**

DR. KUBURSI:

I reviewed a number of reports and studies on public utility management systems, risk assessments and best risk management practices at different Canadian, US and European utilities. I also studied water and drought prediction models, operation research in power generation, operation and planning systems, reviewed optimization systems and software.

I travelled to Winnipeg over 5 times to meet with MH staff and management, PUB consultants, and went to St. Louis in the US to meet with a MISO consultant. I also met with other interveners' consultants and counsels.

I also acquired @RISK software (the basic engine of PRISM) and studied its operations and procedures and developed the capacity to use it with ease

DR. MAGEE:

In addition to the trips to Winnipeg, and information-gathering meetings with Atif, I read various MH documents, the ICF report, and material on: enterprise risk management, the extreme value theory (EVT) approach in statistics, and climate change.

To produce the numerical results, I wrote programs in the GAUSS programming language in order to: (1) estimate coefficients that appear in the statistical models; and (2) use the estimated statistical models to generate simulated observations (i.e. hypothetical future water flows).

- 5(a) **Before turning to the actual report, would you please advise as to when the report was finalized and released?**

Mid-November 2010

- 5(b) **Would you tell me who wrote what parts of the report (referring to the executive summaries chapter headings)?**

Chapter 1: Introduction

Atif wrote first draft and Lonnie made extensive edits

Chapter 2: Background information on Enterprise Risk Management.

Atif wrote first draft, reviewed by Lonnie and contributed to its final form.

Chapter 3: Operational and planning models used by MH.

Atif wrote first draft; Lonnie reviewed and contributed to its final form.

Chapter 4: MH's water supply data, water management models and volumetric risk mitigation measures.

Atif wrote the introduction, Lonnie wrote the other sections, both edited

Chapter 5: Reviewing relevant reports that addressed risk management at MH.

Atif wrote first draft; Lonnie reviewed and contributed to its final draft

Chapter 6: Quantification of relevant risks pertaining to MH's three systems of water, generation and finance.

Atif wrote first draft; Lonnie reviewed it and contributed to its final form.

Chapter 7: A summary of the conclusions and recommendations.

Atif wrote first draft and Lonnie made major edits.

5(c) **What role did your co-author have in the sections that you wrote and what other persons were involved in the writing?**

Dr. Atif Kurbursi and Dr. Lonnie Magee, who wrote the report and Mr. Graeme MacQueen, who edited it.

5(d) **Would you advise with regards to the redactions contained in the redacted report that was released.**

Dealing in turn with each page containing a redaction in the Report:

- (i) page 210 -
contains price information concerning foreign contracts, which information was received in confidence from MH. The redaction confirms positions of KPMG and ICF;
- (ii) page 211-
I - contains information on pricing premium with respect to peak period demand. KM's point is that such premium exists. Provided by MH in confidence.
II - contains information on several factors which have affected long term export negotiations. Factors fall within Confidentiality Agreement. KM considered these additional factors in understanding how prices negotiated;
- (iii) pages 212, 214, 214-215 and 215
all these redactions deal with factors in export contracts which result in price escalations. This information is part of confidential information provided by MH. KM wished to consider the appropriateness of these factors for each of the long-term export contracts;
- (iv) pages 216 and 217
these redactions deal with curtailment condition provisions under the various long-term contracts. KM wished to consider the appropriateness of the curtailment protection, which MH provided in confidence;
- (v) page 218

these redactions involve a summary of certain information referenced in previous redactions;

- (vi) page 224 and 288
the redaction involves KM's finding from a comparison of contract prices to international forecasters prediction. KM's purpose was to determine if negotiated contract prices are appropriate. The information falls within the Confidentiality Agreements;
- (vii) page 311
this redacted information contains uncontrolled water flow data which KM drew on in various segments of the Report. MH provided this information to KM in confidence.

5(e) **What changes if any do you wish to make to the KM report that has been filed?**

DR. KUBURSI:

We would like to take this opportunity to emphasize our call for the integration of MH's models, to correct and expand our estimates of one-year, 5-years and 7-years drought probabilities and costs, provide the expected risk of losses associated with IFF-09 in 2015 and 2020, and compare and contrast different methodologies for predicting water flows.

1) Placing Models on a Common Platform is Unwarranted

KM are aware of the different uses of the various MH models. We also recognize the different mandates of these systems. We still feel that there are good reasons for integrating these models on a common platform, precisely because of the many elements and components they share: all are linear programming models; they use common data sets; they have and must have common coefficients; they profile the same stream flows and generating stations and transmission capacities, etc.

There are many other grounds that could be used in support of this recommendation. **First**, it is possible to create a common talent pool within MH that can be drawn upon by all using divisions. In the present circumstance it appears that a small group of staff is responsible for its own "model"; broadening this base can be to the advantage of MH. **Second**, putting the system on a common platform would make the overall system more coherent and consistent. **Third**, there are economies of scope and scale that can arise from integrating the three models. **Fourth**, a common solver could then be used and maintained, instead of having to contend with different solvers and different computers as is currently the case. **Fifth**, staff can learn from each other and a modeling community can be developed around this common system. It is much easier to develop this community around a

single system than when there are many different systems. **Sixth**, the different uses (operations and planning) and perspectives (time steps and windows) can easily be handled in the integrated system. **Seventh**, any updates and extensions would go the benefit of all users simultaneously, maintaining the integrity of the system. **Eighth**, oversight and validation are easier to exercise over one common system than over three different systems.

2) KM Estimates of Drought Probabilities: One Year, Five Years and Seven Years.

The estimated annual AR(3) model was simulated using re-sampled residuals for one million years. For the five-year droughts, every consecutive five-year period from this one million year period was averaged, producing 999,996 such five-year averages. The number of these averages that were less than the observed average water flow during the 1987-91 and 1937-1941 droughts were counted. The proportion of these five-year averages that were less than the 1987-1991 average was .013833 and the proportion less than the 1937-41 average were .008466. A similar exercise with 7-year averages found that the proportion of simulated 7-year averages that were less than the 7-year average water flow observed during the 1936-1942 period was .012840. Summarizing:

The probability that a randomly chosen five-year period's average water flow is less than the average water flow observed during 1987-1991 is .013833 (one in 72).

The probability that a randomly chosen five-year period's average water flow is less than the average water flow observed during 1937-1941 is .008466 (one in 118).

The probability that a randomly chosen seven-year period's average water flow is less than the average water flow observed during 1937-1941 is .012840 (one in 78).

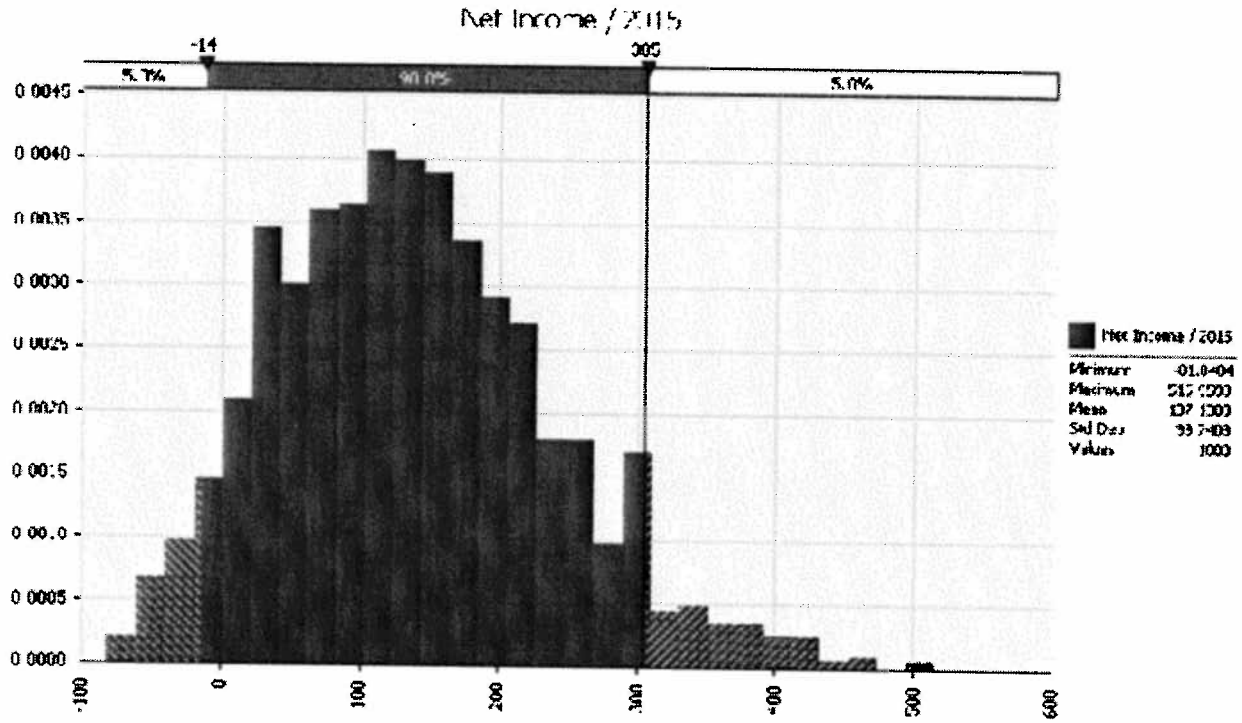
The probability that a randomly chosen year's water flow is less than the minimum year observed during the 94-year period is .00407 (one in 246).

The consequence of a one year drought on net income is \$788 million, while that of a five year drought is \$3,342.7 million and a seven year drought \$4,548.3 million.

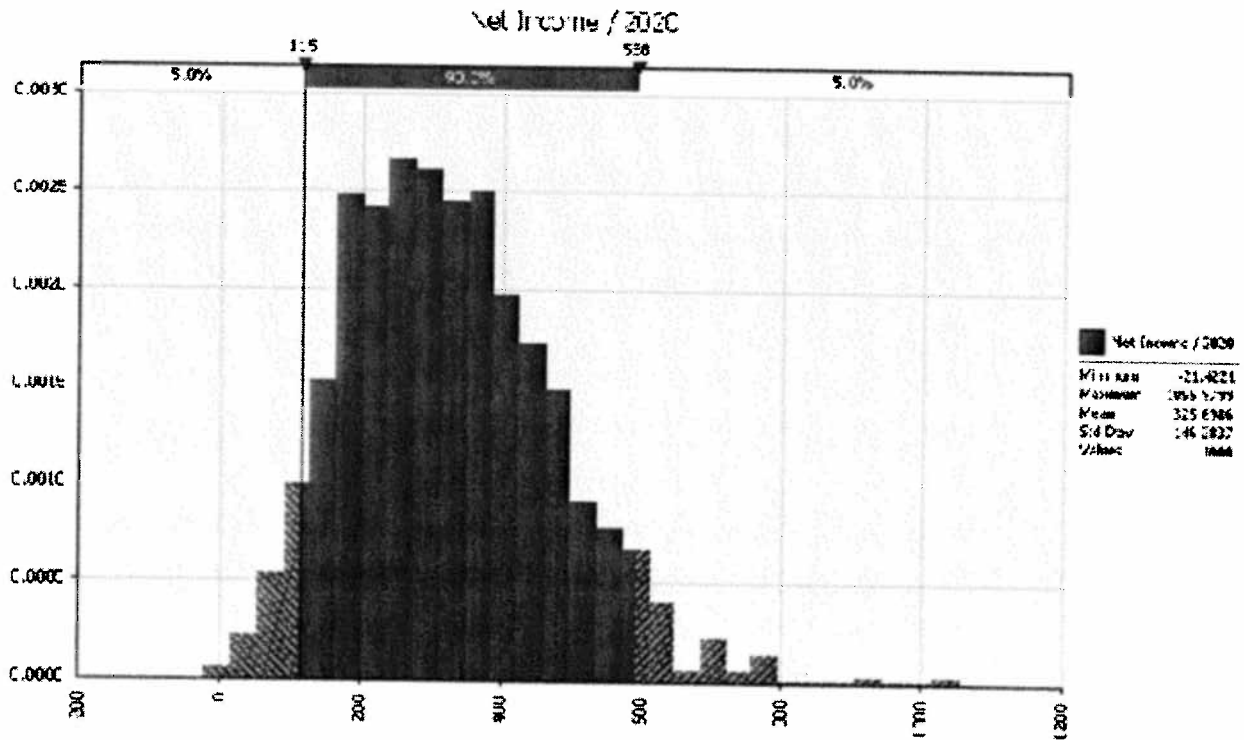
KM started with the benchmark conditions in 2015 and 2020 and introduced the volumetric declines without altering any of the other assumptions. For 2015, a drought would result in an average annual loss in net income of \$499 million and \$712 million in 2020. The results are shown in the figures below at different confidence levels.

3) Estimating the Risks of droughts in 2015 and 2020

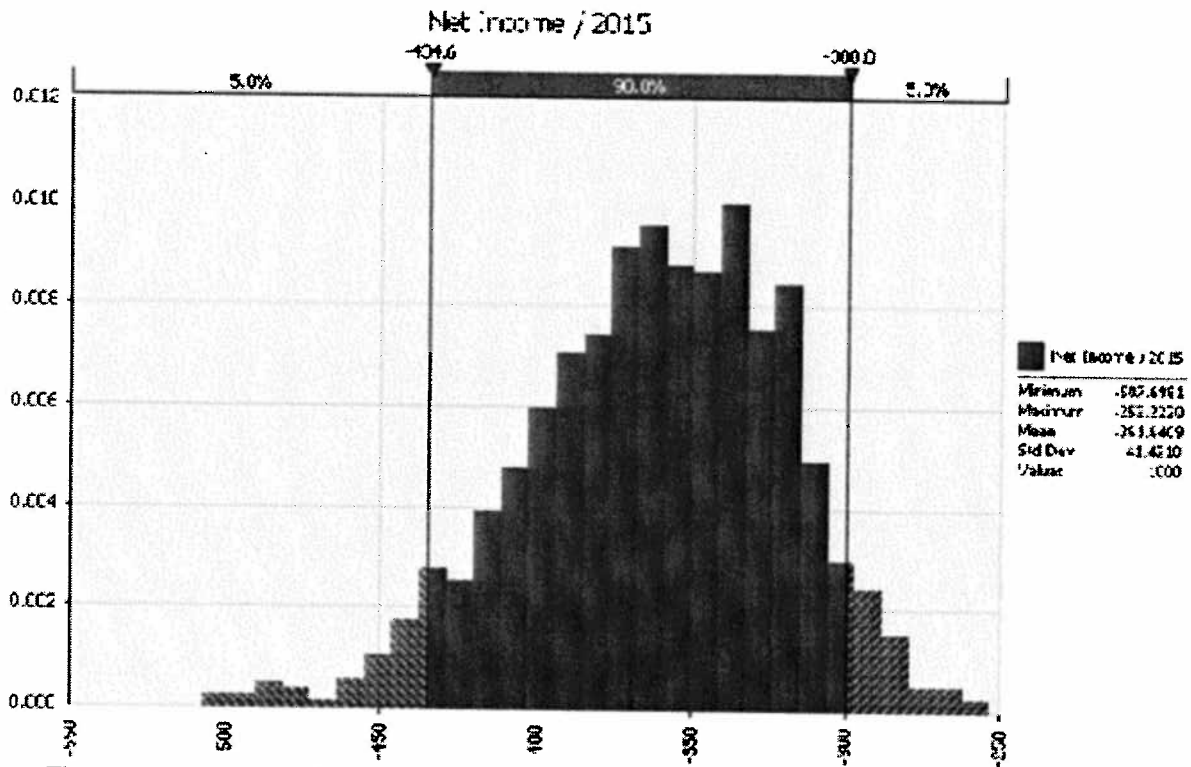
IFF 09-1 Benchmark
Millions of Dollars



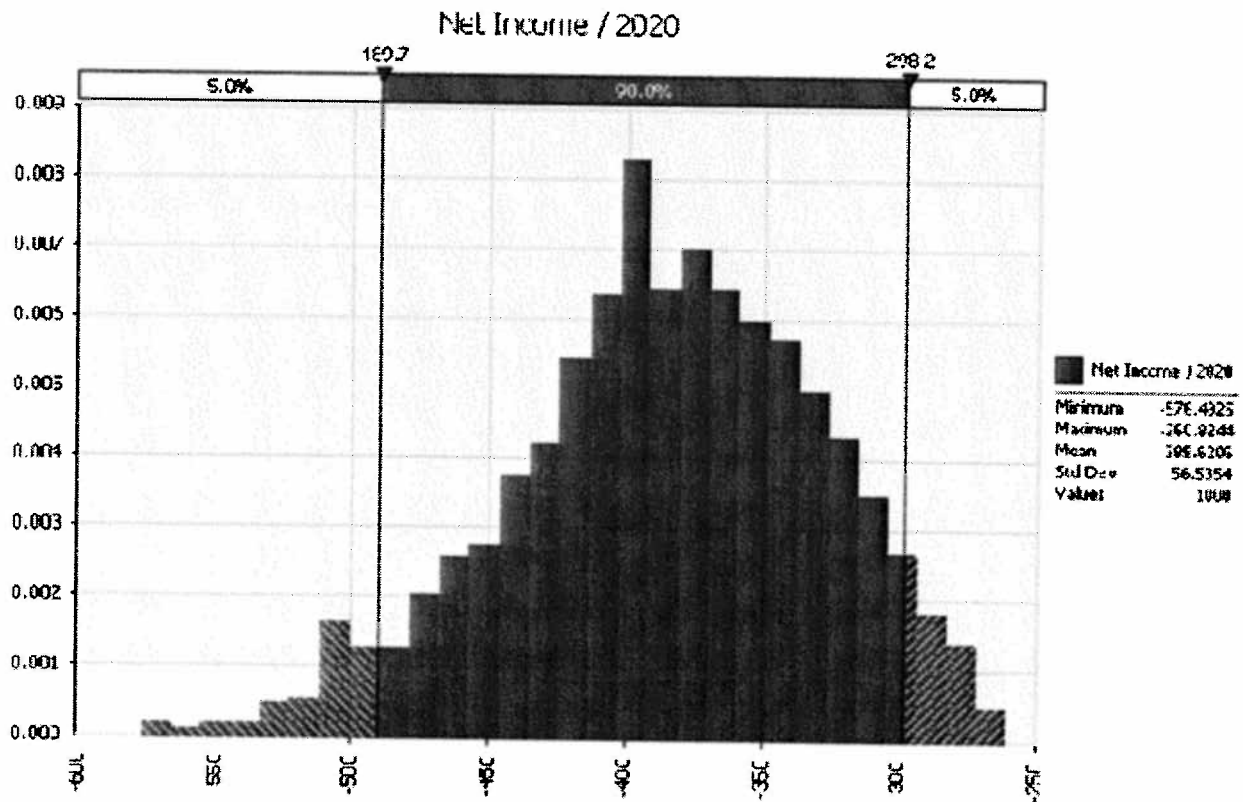
IFF 09-1 Benchmark
Millions of Dollars



Low Flow Benchmark IFF 09-1
Millions of Dollars



Low Flow Benchmark IFF 09-1
Millions of Dollars



4) Water Flow Predictions: Alternative Methodologies

water flow prediction approach	description	advantage	disadvantage
Historical simulation (empirical distribution)	Actual past observations are re-sampled	<ul style="list-style-type: none"> - Intuitively appealing - Easy to understand - Cannot generate nonsensical (e.g. negative) numbers 	<ul style="list-style-type: none"> - does not allow for future outcomes that are different from past outcomes - is particularly restrictive in the way it handles extreme observations, e.g. the minimum observed value becomes the minimum possible simulated outcome by assumption - difficult to simulate possible time series except by simply repeating past sequences
AR(p) model	Current value is predicted by past ("lagged") values with coefficients estimated by least squares regression method	<ul style="list-style-type: none"> - well-known method derived from Box-Jenkins time series methodology used in many disciplines since 1960's. - flexible, number of lags can be adjusted - easy to use results for dynamic simulations - easy to generalize by including other predictors and transforming variables (see next row) - same simulations can be used for single-year and various multi-year drought predictions 	<ul style="list-style-type: none"> - standard AR approach assumes the process is stationary (e.g. no climate change effects, no change in coefficients during droughts) - no automatic mechanism to prevent simulating nonsensical eg. negative) results. - no sure-fire way to decide on the right or best value of p, the number of lags.
AR(p) with Box-Cox transformation	Like AR(p), but the values of the original variables are replaced by a Box-Cox transformation of their values	<ul style="list-style-type: none"> - transformation can result in better fit - easy to simulate, then convert to un-transformed values at end. 	<ul style="list-style-type: none"> - more complicated than standard AR(p) model - if transformation was unnecessary, the extra complexity also leads to less precise estimates
Extreme Value Theory	The distribution of low water flow outcomes is estimated directly	<ul style="list-style-type: none"> - focuses on the low water outcomes without letting the results be affected by the other outcomes, which might not be relevant. - is well-known technique familiar in financial applications (value at risk) 	<ul style="list-style-type: none"> - unlike the AR approach, EVT is difficult to incorporate in a simulation because it does not lend itself to a dynamic model (where past values are linked to current value)

5 (f) **After the release of the report, would you please provide with regards to the following additional matters:**

(i) **Your involvement with respect to the IR's that were asked of you?**

DR. KUBURSI:

I was involved in writing most of the responses to the IR's and rebuttals. Dr. Magee was also involved in most of these. These included:

PUB/KM 1-47 except 9,15,22, 33 and 34.

MH/KM Responses 1-39, except 19,19(a).

CAC/MSOS/KM 1-45, except 12, 34 and 35.

MIPUB/KM 1-6

RCM/TREE/KM 1-19. Dr. Magee edited the answers.

(ii) **Your further contacts with MH?**

DR. MAGEE:

None

DR. KUBURSI:

There was further contact with MH with regards to a demonstration and review of SPLASH on Saturday, January 15, 2011.

(iii) **Would you advise as to the further involvement you have had with the NYC? In that regard, would you please review the set of e-mails now provided to you?**

DR. MAGEE:

I had no involvement with the NYC at any stage.

DR. KUBURSI:

See appendix B as to the e-mails which passed.

(iv) **Dr. Kubursi, why did you wish to meet with the NYC again?**

I thought that it is only fair and necessary that as an Independent Consultant I should give the NYC the chance to explain her public document that was finally made available to us. The public document raised many issues about Long Term Contracts, capital reserve adequacy, VaR, Drought Risks, financial transactions, risk governance at MH, water balances at the end of period, antecedent forecasts, divergence between HERMES and SPLASH inputs and results, etc. I thought that now we were familiar with her ideas and that there are many missing steps in the calculations and verdicts, it would be quite helpful for us to see how and why she had arrived at her conclusions.

(v) **Would you advise as to what further contacts you have had with MH employees or with representatives of the PUB?**

DR. MAGEE:

None

DR. KUBURSI:

I came in July 28-29 to Winnipeg hoping to get from PUB consultants whatever additional financial data and interpretation of the IFF so that we could model its procedures and replicate its results. The aim was to construct a system that we can all have and use to formulate consistent financial analysis of MH operations over 10 and 20 time horizons.

(vi) **Would you advise as to the extent to which you have reviewed the other reports provided by retained experts and the rebuttal provided by MH. I understand that you intend to make some comments with regards to the certain matters in these other reports?**

DR. MAGEE:

We have had an opportunity to review a number of other reports from other experts. We intended to make certain comments. In order for the parties to be aware of our further response we have provided a response.

As well we have provided a rebuttal to Manitoba Hydro and that has also been provided.

DR. KUBURSI:

I reviewed without exception all of the 14 Reports that are discussed in Chapter V of the KM report. I also reviewed the rebuttals of MH to each of these reports and responses of these experts if and when they made them.

The reports that were reviewed include the following:

- 1) MH. Corporate Risk Management Report, October 2008.
- 2) The NYC's June 20, 2010 Public Document (Appendix A).
- 3) NYC Power Point Presentation on Manitoba Hydro. Risk Management Presentation. January 10, 2008 (Appendix G).
- 4) MH's March 2007 Comments on NYC's December 4, 2010 Report (Appendix B).
- 5) MH's May 2007 Comments on NYC's December 4, 2006 Report (Appendix C).
- 6) MH's 2008 Middle Office Review of the NYC's Reports (Appendix D).
- 7) MH's October 2008 Middle Office Comments on NYC's Long Term Contracts Risk Report (Appendix E).
- 8) MH's May 2008 Review of NYC's January 2008 and December 2006 Reports (Appendix F).
- 9) MH's December 2008 Export Power Sales Risk Management Issues (Appendix G).
- 10) Nalinaksha Bhattacharrya. Report on Risks Faced by Manitoba Hydro in Power Exports. July 4, 2007.
- 11) Alan Peretz. MH Corporate Risk Management. Deloitte. January 26, 2004.

12) ICF International. Independent Review of Manitoba Hydro Export Power Sales and Associated Risks, September 11, 2009.

13) KPMG. April 2010 Reports and Appendices (Appendix H).

14) T. Simard and J.R. Joyce. 2002-2004 Drought Risk Management Review, Risk Advisory, January 18, 2005.

5(g) **As you are aware, there are two versions of the report, an unredacted and redacted version; would you please explain how the redacted version came about?**

We entered into a confidentiality report with MH and it is attached as Schedule 2 to PUB/KM 1(e).

The redacted version was in compliance with the confidentiality agreement.

The draft version of the KM Report was sent on:

- (a) November 8, 2010 - Chapters 1 - 4
- (b) November 12, 2010 - Chapters 5 - 7

In response there were two letters from Manitoba Hydro. They are dated November 12, 2010 and November 15, 2010. (Schedule 3 to PUB/KM 1(f)).

With regards to those two letters, we took the position that:

- (a) the report would be redacted as requested by MH and;
- (b) that certain fact information would be corrected based on the letters. With regards to what KM felt were matters of opinion, KM did not change the report on the requests contained in the two letters.

6(a) **I'd like now to turn to your actual report. With respect to chapter 1 (page 1), would you please advise how the report has been organized in relation to the terms of reference?**

I. Explain general enterprise risk management concepts.

Chapter 2: Background information on Enterprise Risk Management.

II. Review and evaluate all relevant available materials which address risk management for MH.

Chapter 3: Operational and planning models used by MH.

III. Review and evaluate MH's water supply data and management model.

Chapter 4: MH's water supply data, water management models and volumetric risk mitigation measures.

IV. Obtain any relevant information required from MH or other participants to the GRA pertaining to risk management issues;

Chapter 5: Reviewing relevant reports that addressed risk management at MH.

V. Identify all material operational and business risks for MH's 20 year IFF.

VI. Prepare statistical analyses and quantification of risks to consider the probabilities of all material operational and business risks of MH.

Chapter 6: Quantification of relevant risks pertaining to MH's three systems of water, generation and finance.

VII. Provide recommendations for risk mitigation measures by MH.

Chapter 7: A summary of the conclusions and recommendations.

VIII. To be available through counsel for Consultants, as resource on general risk management inquiries.

IX. Provide a written report covering matters in items 1-7.

X. Participate as independent witnesses before the PUB in the current *MH GRA*.

6(b) **Dr. Kubursi would you please review chapter 1 for the PUB?**

Introduction

A) Unique attributes and characteristics of MH

1- Inherent difficulties in being a public utility

a) Business entity seeking positive, if not maximum, net income,

b) Conflict between domestic demand and exports,

c) Serving the best interest of its shareholders, the residents of Manitoba who are also its principal clients;

- 2) Hydro- oriented
 - a) critically dependent on weather and the environment
 - b) weather is variable and unpredictable
 - c) 95% of total power generated is hydro based;
- 3) Export – Oriented
 - a) MH is a natural monopoly, selling power without competitors in the domestic market but cannot set its price.
 - b) faces stiff competition in the export market, where it is price-taker.
 - c) share of export 31% of total generation, 80% of which goes to the US
 - d) firm exports represent 14% of generation, where as opportunity exports represent 16% of generation;
- 4) Government control and oversight
 - a) Seeks to maintain an independent and accountable governance regime over the natural monopoly;
- 5) Large Investment required, economies of scale and scope, and high barriers to entry;
- 6) Public regulation is premised on simulating competitive market conditions that force the natural monopoly to moderate its market power and charge prices equal to marginal cost and to accommodate client interest.

This special characteristic distinguishes MH apart from the general run of Canadian business. This duality raises issues and creates possible problems but also confers advantages on the utility. The list of problems includes:

- 1) Principal agent problems—different tolerance of risk
- 2) Information asymmetries.
- 3) Moral hazard problems. The utility may be tempted to undervalue risk and to pass the cost of its risk taking to its domestic customers .

Possible Advantages:

- 1) The utility may be able to borrow at preferred rates and has greater and easier access to capital markets;
- 2) Can pursue social and environmental objectives.

The misalignment problem:

The regulator must align the risk exposure and tolerance of the utility to match that of the citizen, on behalf of whom the regulators act.

Citizens are risk averse and MH as any corporation maybe less risk averse. Therefore MH risk tolerance and acceptance can very likely differ from that of its shareholders.

This mis-alignment in risk tolerance arise not only because of possibly different appetites for the risk but also from the fact that the public assumes the cost of any losses either in higher electricity rates or through debt payment charges, where as the potential rewards of the risk taking at internalized.

This is not to underestimate the prominence of MH as a leading economic sector in Manitoba.

6(c) **Dr. Magee, would you please summarize the major finding?**

(reference Chapter 1.4 of KM Report at page 17)

6(d) **I note, gentleman, that the organization of various other chapters of the report are then explained at page 19 and 20 of the Report.**

DR. KUBURSI:

(reference to pages 19 and 20 of the KM Report)

We tried to organize the presentation of our report to match the terms of reference.

7. Dr. Kubursi would you please summarize appendix A of the Report, found at page 290?

The mathematician Bernoulli noted that the value of an item must not be based upon its price, but rather on the utility it yields. The price of the item is dependent only on the thing itself and is equal for everyone; the utility, however, is dependent on the particular circumstances of the person making the estimate.

This divergence between price and utility gave Bernoulli two insights that continue to animate how we think about risk today. First, he noted that the value attached to a gamble (flipping a coin) would vary across individuals. Certain individuals would be willing to pay more than others, with people's difference being a function of their risk aversion. His second insight was that utility from gaining an additional dollar would decrease with wealth: he argued that "one thousand ducats is more significant to a pauper than to a rich man, although both gain the same amount." He was making an argument that the marginal utility of wealth decreases as wealth increases, a view that is at the core of most conventional economic theory today. Technically, diminishing marginal utility implies that utility increases as wealth increases, but at a declining rate.

If we accept the notion of diminishing marginal utility of wealth, it follows that a person's utility will decrease more with a loss of \$1 in wealth than it would increase with a gain of \$1. Thus, the foundations for risk aversion are laid because a rational human being with these characteristics will then reject a fair wager (a 50% chance of a gain of \$100 and a 50% chance of a loss of \$100) because she will be worse off in terms of utility.

8(a) Dr. Kubursi would you please briefly summarize chapter 2.1 to 2.4 of the report (at page 21 - 47)?

Enterprise Risk Management: Best Practices and MH Procedures: Over the past 10 years, risk management has evolved from an often overlooked Back Office discipline to a vital component of securing every business' future. It is now an increasingly Middle Office responsibility and typically placed in the Office of the highest ranking operational position.

Risk management has evolved from an obscure function of finance and insurance to an approach necessary for any organizational resilience.

Plato's Dictum

The problem with the future is that more things might happen than will happen. There are many potential events that may or may not occur.

Defining Risk

The whole notion of risk is about the potential of an event or an action or inaction to adversely affect an organization's ability to achieve one or more of its objectives. It relates to an objective measure of probability of occurrence and a quantitative measure of expected consequences and outcome.

Defining Enterprise Risk Management (ERM)

ERM is the process of systematically identifying, assessing, quantifying, prioritizing, mitigating and controlling all significant risk sources, with a view to optimizing the balance of risk and return across the organization. The analysis is based on two maps:

Risk Maps

Risk maps are typically qualitative in nature and can be considered ad hoc unless complemented by a detailed quantification of the risks and the expected value of their consequences. Even this may not be enough. A full representation of the probability density functions is needed as well as a well- defined delineation of the 95% level of confidence that brackets the spread of possible outcomes.

Control Maps

Once risks are identified, assessed and quantified they need to be controlled and mitigated. An ownership structure is necessary to assign the various functions from identification to mitigation to specific management nodes that will be accountable to the upper management structures for discharging their responsibilities.

Control Maps and Risk Maps

The control maps without the risk maps will lack focus, the quantitative base and the responsibility structure. Once the metrics of quantifying the probabilities of occurrence and expected values of consequences are determined in the risk map, a set of scores are assigned to them to reflect their risk ranks. These risk scores are matched with congruent control measures and procedures together with a responsibility matrix to optimize the balance between risk and outcomes.

Risk Management Best Practice

First, risk management is not a one time event or a window dressing exercise. It is a serious on-going process. It is a systematic process based on feasible options and choices to optimize results and outcomes.

Second, it is about prioritizing risks in terms of probabilities and consequences, and segregating risks in areas of specific concern.

Third, it is not sufficient, although it is important, to simply recognize, identify and link risks to business operations and objectives. Objective and numerical procedures for estimating probability density functions and ranges must be undertaken in a systematic, transparent and replicable ways.

Fourth, the statistical procedures should be verified and validated by subject matter experts (SME) in both the Front and the Middle Office.

Fifth, risk assessment is done with a purpose. It is not sufficient to know what the risks are: it is equally important to devise strategies and procedures to deal with them and reduce their threat to the realization of the objectives of the enterprise.

Sixth, individual responsibilities for these risks must be assigned. Individual responsibility must be backed by authority, resources, expertise and oversight.

Seventh, monitoring and tracking are essential components of a best practice system of risk management. Organizations that optimize risk management are those that learn from mistakes and treat risk management as a continuously optimizing process.

Risk Management Practices at MH

Manitoba Hydro has developed an extensive and elaborate risk management system to identify, control and manage risks.

This system is still evolving making difficult any generalization about its status as new developments and adjustments are on-going as we write this report.

MH has developed systems to monitor and control key risks and to sustain information flows within the organization and to appropriate stakeholders concerning changes in risk profiles and their management within the Corporation risk tolerances.

Likelihood, consequences and tolerances are colour coded and ranked as low, medium or high. The basis of this coding is not very clear and certainly is not based on revealed quantitative calculations.

The Corporation has also developed and instituted a Management Control Plan (MCP) with several committees and mechanisms to oversee all power related transactions in both Canada and the United States.

Among the most important of these committees are:

- 1) MHEB
- 2) *EPRMC*
- 3) PSOMC

Front, middle and back offices have been created at MH to facilitate the implementation of the MCP.

The Front Office is responsible for energy sales, export marketing strategies, market access, long term contract negotiations and power trading.

The Middle Office is responsible for risk management activities.

The Back Office is tasked with ensuring the integrity of systems and processes for transaction settlements

8(b) Dr. Kubursi would you please summarize the recommendations found at chapter 2.5 of the report (at pages 47-51)?

Recommendations: The drastic events and the significant financial losses caused by the drought in 2003/04 drove home the need for instituting a comprehensive risk management plan to identify, assess and mitigate possible recurrence of drought.

The plan has since been extended to cover a broader spectrum of anticipated risks. The discussion above suggests that a number of necessary steps have been taken and that a number of policies and procedures have been instituted to prepare the Organization to deal with risks.

When the best practice structure defined earlier is super-imposed on the current practices of MH a number of gaps emerge that MH can easily deal with in a manner that will increase and strengthen its resiliency and capacity to manage risks.

First, the Risk Map and the Control Map are clearly in place at MH. There may be some questions about how comprehensive the list of identified risks is, as well as the extent to which the probabilities and expected values of outcomes and consequences are the products of objective criteria.

Second, the Corporate Risk Management Report ("CRMR") will be more complete if there is attached to each risk identified and colour coded, a component of the Organization identified as responsible for it. In the absence of this responsibility matrix, it will be difficult to define and implement a risk accountability structure for the Organization.

Third, a superstructure is needed to evaluate, validate and verify different assessments. At each level a dual structure is needed; one to undertake the assessment in situ at the operation level and another to validate it at a management level. The function of the Middle Office here is critical for the success of the management of risk function.

Fourth, the qualitative aspects of risk management are well in place at MH. Unfortunately, this is not the case when it comes to the quantitative areas of risk management. There is hardly a mention of the word "Quantitative" in the CRMR.

Fifth, quantification of risk and expected values are calculated at MH. There exists a number of models (particularly PRISM) and systems that are used as part of the operations of MH particularly at the Front Office – but these are not part of the function of risk management at the Middle Office. Their use and their numbers should be part and parcel of the risk management plan that needs to be verified by the Middle Office.

Sixth, the quantification of financial exposure should use fair market values (replacement costs). The Mark to Market (MTM) measures shall take precedence over other benchmark evaluations of financial risks.

Seventh, it makes sense to organize specialized teams to assess major identified risks for their probability of occurrence and their impact on business objectives. Risk teams should elicit assistance from "Subject Matter Experts (SME)" or functional units to assess the risks in their respective fields, but they should all funnel their expertise and calculations to the Middle Office.

Eighth, the Organization can surely benefit from greater visibility and use of statisticians and actuarial experts and from instituting these expert committees, especially when they are all linked and integrated to the risk management function and the responsible body (Middle Office) for it within the Organization. The Middle Office can surely benefit from recruiting specialized experts in statistics and risk analysis, at present it appears to be under staffed.

Ninth, the governance structure of risk management at MH can benefit from some needed restructuring and alignment. The CRMC is now part of Finance & Administration Division and reports to the Senior VP of the Division. It is now on the Organizations' Organogram at the lowest slot.

Tenth, there is an evident multiplicity of bodies dealing with risk (EPRMC, PSOMC, and CRMC, etc.). In itself, this is not a problem, but it becomes a problem in the absence of a well defined integrated and centralized structure that can harmonize the lines of authority, obligations and accountability.

Eleventh, Risk Preparedness Plans and manuals are needed for all costly risks. A broad preparedness plan can make substantial contributions to the effectiveness of risk management services and plans at MH.

Twelfth, MH has set limits and tolerance levels quantitatively in the areas of Merchant Transactions and Customer Credit. The setting of quantitative targets and rules should be extended to all areas of operations particularly power trading and export sales. The exposure versus limits reports should cover all aspects of operations with financial implications for MH. Variance and exception reports should be all encompassing and produced routinely.

Thirteenth, best practice requires that any business transaction should be evaluated on its own but particularly for all the risks that it may encounter. This should be done by the business unit directly involved (Front Office) but an independent review must also be undertaken by the Middle Office.

Fourteenth, MH should direct the Middle Office to undertake such an assessment with every business opportunity above a certain dollar limit but particularly all Long Term Contracts.

Fifteenth, many functions and activities in the organization are operating with deterministic models and frameworks. This is not particularly helpful for an organization that has taken the challenge to manage and control effectively and proactively all of its risks.

Last but not least, detailed training and simulation games dealing with risk occurrences and plans should be developed for the organization. These training programs and learning by practicing simulations have helped other organizations in dealing with their risk exposures and threats.

9(a) **Dr. Magee would you please explain the general role of the MH models as set forth in chapter 3.1 of the report (at pages 52-58)?**

The models can be ordered by time horizon, from very short term (for minute-to-minute generation adjustments) to very long term (for decades-ahead power generation planning). Ordering from shortest-term to longest term, the models are:

MOST _ HERMES _ SPLASH

MH also uses models for load forecasting and risk quantification (PRISM).

9(a.1) **Dr. Kubursi would you respond as well:**

MH Models

In Manitoba hydrology, power generation, and financial systems are subsystems of a broader politico-technical system of which MH is a key component. More precisely, three basic systems comprised of hydrology, power and finance interact with one another to define a complex underlying reality.

The modes of interaction and the relationships that govern the workings of these systems are quite complex. The number of variables within each system is very large and is exceeded only by the number of relationships that balance the complex interactions among these variables.

What is a Model

Models are of central importance in many scientific contexts. In short, models are one of the principal instruments of modern science.

In simple language, a model is a theoretical construct that represents underlying processes by a set of variables and a set of logical and/or quantitative relationships between them.

Generally models have two characteristics:

First, they are a simplification of and an abstraction from observed data. It is impossible to include and represent the entire complex reality. Abstraction and generalization are necessary.

Second, they are a means of selection of data based on the purpose for which the model is built.

The details of model construction vary with type of model and its application, but a generic process can be identified. Generally any modelling process has three steps:

- 1) Constructing a logically consistent model (heuristically making sure that the number of relationships is equal to the number of variables);
- 2) Checking the model for accuracy and validating its ability to track the observed data;
- 3) Using the model for explaining and/or predicting the underlying complex reality.

Models: Evaluation Criteria

There are other criteria to use in evaluating the model beside its logical consistency and accuracy. These include its overall structure (linear or non-linear) and type (deterministic or stochastic), complexity, completeness, ease of use and interpretation, its designers' skills, and the competence of the backstopping technical and professional staff.

Model Limitations

Models suffer, in general, from two problems:

First, they cannot capture the full detail of the underlying system: they rely on approximate equations to represent the complex reality. Second, they are sensitive to small changes in the exact form of these equations. This is because complex systems like the economy or the climate consist of a delicate balance of opposing forces, so a slight imbalance in their representation has big effects. Thus, predictions of things like economic recessions or weather are still highly inaccurate, despite the use of large models running on fast computers.

The quality of the model becomes inseparable from the results that it generates and predictions it makes but these may have more to do with the quality and accuracy of the data and initial conditions than with the model itself.

MH Models

Manitoba Hydro uses a large set of models to predict and optimize its operations, evaluate transmission options, quantify risk, forecast domestic load, and as tools for short term operations to long term planning and expansions.

The entire spectrum of models used by MH was evaluated including MOST, which is a control oriented model that deals with the very short run, as well as HERMES, SPLASH, PRISM, the LOAD FORECAST and the Economic Outlook (EO).

- 9(b) **Dr. Magee would you please explain the role of the MOST model as referenced at chapter 3.2.1 of the report (pages 59-65)?**

MOST is a decision support system (DSS) for hourly scheduling of generation and reservoir operations for Manitoba Hydro's generating facilities and transmission network. It is built around the software program VISTA. It performs the following tasks:

1. One-day-ahead capacity planning in order to provide information to day-ahead traders.
2. Scheduling of resources for the entire week.
3. Hour ahead for committed load and transactions.
4. Post audits and outage planning.

This involves reviewing long term water management decisions. Then a one week optimization analysis is conducted, reviewed and saved to the official schedule. The weekly schedule provides 24-hour-ahead schedules that are updated twice an hour.

9(c) **Dr. Kubursi would you please do the same for the HERMES model at chapter 3.2.3 of the report (pages 65-79)?**

The Hydro Electric Reservoir Management Evaluation System (HERMES) Model
The goals of the HERMES system are clear and precise. They include:

1. To produce an energy production schedule.
2. To maximize operating profits.
3. To link generation maintenance to reservoir operations.
4. To maintain system firmness.
5. To maintain system reliability.
6. To repeat the system optimization weekly.

The system produces an optimum production schedule for the integrated reservoirs, hydro-thermal generating stations, and the HVDC system and inter-utility tie-lines. Not only is the schedule feasible, meeting all the constraints, but it maximizes the system's net export income.

Maintenance scheduling is linked to operations so as to minimize dislocations and opportunity costs.

Firmness of the system is accomplished through imposing tight energy reserve constraints in storage reservoirs.

The analysis is updated weekly in order to incorporate any new developments and changes in the system, particularly those that concern water inflows into reservoirs, precipitation levels, loads, export markets and equipment outages.

One of the recognized advantages of HERMES is the continuous updating that has continued throughout its development and use. The weekly updates of data and information and scrutiny of results at Power Sales and Operations is also a recognized advantage for keeping the solutions current and relevant.

Recommendations

By any standard HERMES is an impressive system: it developed over time and grew in complexity and utility.

Its developers are on staff and the source code is home stored. We are satisfied that the technical staff that support and run the model are competent and committed. We have seen a couple of demonstrations of the system and we have seen its objective function, constraints and inner workings. It is a large system with over 8000 constraints and bounds and a larger number of variables. It is capable of generating a rich set of bases (linearly independent vectors) that define feasible solutions for the objective function to choose from among them the optimal one.

Being an internally developed and maintained system, HERMES has advantages and disadvantages.

Among the advantages is the ease and flexibility of changing and upgrading the system. We understand that this is a continuous process at MH. But being a home grown product it may not be documented sufficiently or regularly. We have not seen a **User Manual or a Technical Manual**--typical products of commercially developed systems. Home grown products are protected and defended with zeal by their developers. This is why it makes sense to subject the system to an external audit by the Committee of Experts (MAC) we mentioned in the context of MOST. The need for this validation and audit is doubly important when the model is home grown.

The deterministic nature of the model calls for more thorough adjustment and upgrades. It makes sense to move to a stochastic system or at least to add a few stochastic modules.

The same goes for some non-linear modules in the system. Since the underlying structure is nonlinear and new solvers (GAMS or AIMMS) can easily solve large nonlinear and stochastic systems, it is worth considering these upgrades. Successive optimization may reduce this need, but in our opinion this will be a poor substitute.

The availability of PRISM at MH should facilitate using stochastic forecasts instead of the arbitrary optimistic and pessimistic variants.

HERMES is one of many systems within the general class of LP system. It is for a medium term horizon. It sits between MOST and SPLASH. We would like to urge the model builders and users to fine tune their models' integration and collectively work on synchronization and communication. It would make sense to insure that the same data inputs are shared among all of the models. Using different data inputs or different coefficients raises red flags and detracts un-necessarily from the usefulness of the system.

9(d) **Dr. Kubursi would you please do the same thing for the SPLASH model at chapter 3.2.5 of the report (pages 80-97)?**

While MOST is an hourly and daily planning operational planning tool and HERMES is for medium-term operational planning, SPLASH is a long-term planning tool. Its horizon can extend up to 40 years.

Since hydro energy represents 95- 98% of typical MH energy generation, water variability is a major concern. SPLASH represents this water variability by using the 94 historical years of monthly flows. Each of the 94 flow years is chronologically cycled through the simulation period (typically 40 load years), in a way that guarantees that every flow year occurs in every load year. This results in a series of 94 different flow cases to map the hydrological variability.

SPLASH is not modelled as a continuous flow; instead it is modelled in small time increments called "windows" where each window represents a year and these years are broken down into variable lengths of "time-steps". Within each strip there are several segments. Currently SPLASH has two strips (one for on-peak hours and another for off-peak hours). While the use of 94 flow possibilities increases the chances of picking a "correct flow" level, the procedure is still limited to the actual occurrences of these flows as determined by history.

SPLASH is a critical component of the model family at MH. It plays a crucial role in simulating future alternatives and is depended upon to plan the system requirements for expansion in the future.

Recommendations

We are happy with the simulation structure of the system and the insights this can add to its utility. The three phased process of determining dependable energy to rule curve determination of elevation levels to minimizing production costs are interesting and valuable applications.

There are a number of issues, however, that need to be addressed: These are set out in the report.

9(e) **Dr. Magee would you do the same for the PRISM model at chapter 3.2.7 of the report (pages 97-103)?**

PRISM is a probabilistic model that accounts for uncertainty in long range scenarios for planning purposes. It incorporates load forecasts from the Electric Load Forecast Model, water flow and other hydraulic conditions from SPLASH, monthly distributions of electricity export prices, exchange rates, gas price forecasts, and scheduled maintenance.

Power Risk System Model (PRISM)

PRISM is an in-house model that was developed at MH with the help of Risk Advisory of Calgary. It marks a major step toward integrating probabilistic models in the planning and decision making structures at MH.

The system incorporates load forecasts from the Electric Load Forecast Model, water flow and other hydraulic conditions from SPLASH, monthly distributions of electricity export prices, exchange rates, gas price forecasts, and scheduled maintenance from different sources including HERMES. PRISM analysis introduces volatility in these variables and chooses probability distributions to represent them.

Hydraulic variables are assumed to replicate the 94 flows actually experienced between 1912 and 2005. Each year in this series is assumed to have an equal chance (probability) of being the first year. But once a given year is assumed to

occur the pattern (using the serial correlation among the years) that followed that year in the actual data will be forced on the system for five years.

The assumed pattern of flows is translated into power and it is sold at forecast prices and terms. These prices and volumes are assumed to be probabilistic and assumptions are made about the distributions that define the range of these forecasts.

When the outcomes (e.g., net revenues) are generated based on these probabilistic forecasts a 1000 (more simulations can be prescribed in RISK) simulations are run using Monte Carlo assumptions to map all the possible net revenue outcomes that could emerge from the randomly generated values but particularly those that are bracketed between the lower tail of the distribution at 5% level of confidence and the upper tail at the 95% level. In other words, it defines the range of values of the variable that would occur 19 out of 20, or at the 95% level of confidence that the estimated value will be above the lowest number at the 5% tail of the distribution and below the highest number at the 95% level of the probability distribution.

Recommendations

PRISM fills a gap at MH. The aftermath of the 2003 drought highlighted the need for probabilistic models that can map a wide set of possibilities and introduce uncertainty into decision making and planning at MH, avoiding arbitrary specifications of pessimistic and optimistic forecasts. Besides, it enriches the set of what-if runs to a large magnitude from randomly generated values, replacing the limited number of possibilities typically used. A number of recommendations are tendered and these are presented in details in our Report.

9(f) **Dr. Magee would you briefly explain the purpose of chapter 3.2.9 of the report dealing with the electric load forecast (found at pages 104-115)?**

This section addresses part of the term of reference II: "Review and evaluate all relevant available materials which address risk management for MH". We describe some of the estimated regression equations that are used for load forecasting the different demand sectors, how the forecasts are calculated, how the forecast performance is assessed, and we offer some suggestions.

- 9(g) **Dr. Magee would you also deal briefly with the summary and recommendation found at chapter 3.2.10 (pages 116-119)?**

Electric Load Forecast

The electric load forecast is a central and critical component of planning operations in the medium and long term at MH. It is used in most other models and therefore its accuracy is of critical importance to all these models and their forecasts.

Recommendations

Errors in the load forecasts can be costly and could result in faulty decisions and plans.

The combination of survey results, technical and engineering information and regression techniques results in a rich base for the forecasts. The forecasting accuracy is deemed reasonable for the 5 year term and the move to integrate probabilistic forecasts is encouraging. The people responsible for maintaining and running the model are competent, enthusiastic about their work and dedicated. We were impressed with their knowledge and expertise. There remain a number of issues raised in the Report.

- 9(h) **Dr. Magee, would you comment as well:**

The electric load forecast is used in many other MH models. Its accuracy is of critical importance to these models and their forecasts.

The combination of survey results, technical and engineering information and regression techniques results in a rich base for the forecasts. The forecasting accuracy is deemed reasonable for the 5 year term and the move to integrate probabilistic forecasts is encouraging.

Our suggestions:

- 1) We encourage further experimentation with different explanatory variables and regression specifications.
- 2) Some econometric models for risk analysis combine the use of the standard errors of the coefficients with assigned probability distributions for the independent variables in a Monte Carlo simulation to predict a probabilistic range of the key variables of the system. MH could easily develop a similar framework.

- 3) Those responsible for the load forecast become official members of the model community group at MH, leading to greater integration of their models with the rest of the models at MH.
- 4) Weather related variables could be included in more of the equations given its high significance in the equation in which it was included. The question remains: how to forecast this variable itself?

9(i) **Would you please reference your response to MH's rebuttal to Chapter 3 of your report.**

Reference to Section D, pp. 3 to 6 of Response Papers of KM

9(j) **Dr. Magee would you explain the purpose and format of appendix B of the report (found at pages 295-306)?**

This appendix describes the modelling approach that we use for our financial calculations. It contains three sub-systems: hydrological, power generation, and financial. The relationships that form the model are described in flow chart form and through mathematical equations.

9(k) **Dr. Magee would you also explain your findings with regards to the load forecast model as referenced at chapter 3.3.5 (pages 128-130)?**

Economic Outlook

In March of each year the Economic Analysis Department (EAD) of the Corporate Strategic Review Division of MH prepares an Economic Outlook (EO) that becomes a reference for other departments and models. The forecasts included in the EO cover a wide range of variables from Gross Provincial Product to short and long term interest rates, the short term and long term exchange rate of the Canadian dollar, population, employment, unemployment rate, residential customers and commodity prices.

Only a limited number of forecasts are made in-house. Most of the forecasts are derived from consulting companies (HIS Global Insight, Infometrica, and Spatial Economics), Canadian banks (BMO, CIBC, RBC, TD Bank, and the National Bank

of Canada), and statistical bureaus (Manitoba Bureau of Statistics (MBS) and Statistics Canada) as well as the Conference Board of Canada.

There are a number of issues that arise in connection with the use of multiple forecasts and forecasters. Most of these forecasts are made in the context of consistent models (e.g., Infometrica uses its CANDIDE model), and the Conference Board has its own model, as do many of the banks' economic departments. The forecasts they generate are outcomes of the use of their models' structures and assumptions. This fact makes it difficult and inappropriate to lift a single variable forecast from one model and to use it independent of the other forecasts that were simultaneously generated. This, of course, creates a dilemma. If one uses the Infometrica's forecasts of interest rates or exchange rates, then one needs to use all other forecasts from Infometrica. If other forecast variables are drawn from other models this will amount to mixing apples and oranges.

Recommendations

A number of recommendations are in order here beginning with adding both human and financial resources to the EAD and ending with expanding the mandate of the Department and changing some of its operating procedure. The centrality of the uses of the EO necessitates elevating this function from a purely eclectic assembly of others' forecasts to a more nuanced and effective contribution.

The actual recommendations are set out in the Report.

- 10(a) **Dr. Magee turning to chapter 4 of the report, would you please explain what this chapter is intended to accomplish?**

We discuss some general aspects of prediction problems: what aspects of the prediction to report or calculate (means, quantiles, point predictions), and the difficulty in finding a consensus on the best prediction method. We then describe autoregressive and extreme value methods, and apply them to MH monthly and annual water flow data.

- 10(b) **Concerning ch. 4, I would ask that you comment on the Report of Mr. J.Wallach**

(-Reference to Section c of Response Papers of KM)

10(c) Would you please proceed, Dr. Magee, to review sub-chapters 4.3 - 4.5 (at pages 136-156)?

We note that predicting water flows in the short, medium, and long-run, as well as predicting the frequency and intensity of extreme water flow outcomes, have their own challenges and considerations. There is no single universally-acknowledged best prediction method, nor is it easy, after estimating several models, to decide which one produces the best predictions.

Our main goal here is to suggest and illustrate a couple of prediction methods that, unlike the historical simulation method currently favoured by MH, allow for droughts periods of greater (or lesser) severity than those in the historical record. One is the autoregressive (AR) method where the variable is expressed as a function of its recent past values and a random term. The other method is extreme value theory (EVT), which focuses on the tail of the distribution (e.g. on the drought years only) and does not lend itself as easily to short-run prediction. Both models have parameters that are estimated using the historical data.

When these parameters are estimated, the two models predict a similar probabilistic range of drought events.

10(d) Concerning risk exposure from a drought would you comment on the reports of P. Bowman and Mr. A. McLaren.

(-Reference Section B of Response Papers of KM)

10(e) Could I also ask you to reference the first parts of your response to the rebuttal of MH

(-Reference Section D of Response Papers of KM)

10(c) Dr. Magee would you also please explain the purpose and significance of appendix C (found at pages 307-311 of the report)?

This appendix describes the simulation method used to generate the probabilistic ranges referred to above. They are described in more detail to make it easier for others to replicate and build on these methods if desired.

10(d) Dr. Kubursi, would you please summarize the finding of chapter 4.6 of the report (pages 157-163)?

Climate change is already generating uncertainty about future water flows. Any conclusions based solely on the past evidence would be thrown into question by the prospect of relatively rapid changes in weather patterns.

The summer precipitation map in the Report indicates a slight increase in precipitation for the majority of the northern basin energy supply area, and a slight decrease for the other relevant areas. The winter precipitation map shows slight increases in some energy basin areas and slight decreases in other areas. According to this NRC scenario, the changes in precipitation patterns expected over the next two decades appear to be small relative to the inherent uncertainty in year-to-year precipitation patterns.

The temperature scenarios tell a different story. The summer temperature is expected to increase by three to four degrees Celsius, and the winter temperatures by four to five degrees. The implications of these expected changes on MH's production and finances are not straightforward, and we do not attempt to delineate them here, we only hope that these factors would soon find their way into MH planning models. Revenue and cost implications vary greatly by season, and evaporation loss would be affected.

11(a) Dr. Kubursi, in reference to chapter 5.1 (pp. 164-166) of the report, would you please advise its purpose?

NYC

- We did not succeed in obtaining all of the NYC's risk reports. NYC insisted that any review of her reports will constitute an infringement on her intellectual property rights.
- We opted instead to review exclusively her public document but complemented it with a face to face interview with her in New York City, as well as reviewing the reports prepared by MH and KPMG that dealt with her work and responded to her allegations.
- We tried repeatedly to meet her in person again. The initial visit with her took place in New York City over a two day period between June 6 and 8, 2010. Dr. Kubursi, accompanied by Mr. Gavin Wood our counsel. We have tried subsequently to initiate another discussion following the release of her Public Document, June 20,

2010, but failed. Another meeting with her would have given us the chance to ask questions and for her to explain her logic, methodology, calculations and implications of her statements in the public document.

11(b) **I appreciate that this chapter deals in order with a number of reports. Dr. Kubursi, would you please explain the format of this review?**

Reports and Themes

We preferred to define a small set of themes, each addressing a set of issues. These issues were analyzed from the various perspectives of the different authors and parties involved. We abstracted from the adversarial positions of the authors of these reports and dealt directly with the core issues they raised, reporting here on those that we deemed to be particularly relevant and critical for risk management at MH.

A large set of issues define the common focus of the risk reports to be reviewed, but these can be summarized to include the following themes:

First, we considered the effectiveness, appropriateness and the predictive accuracy of Manitoba Hydro's suite of models in supporting optimum operations, capacity planning, financial forecasting and budgeting processes.

Second, a special section was devoted to volumetric and drought risks as these are considered substantive and unique to Manitoba Hydro.

Third, the risk governance system at MH and its consistency with best practice were evaluated in terms of segregation of responsibilities, competencies of staff, transparency, limitations and ownership.

Fourth, we evaluated the risk management system at MH in all areas including power generation, sales, reliability, equipment, human resources, finance and investment. Issues of risk identification, measurement accuracy, control, and mitigation will be analyzed separately and in relevant combinations.

Fifth, issues of risk capital adequacy, self insurance, asset-backed power sales, moral hazard and financial viability were also evaluated under different risk management regimes.

11(c) **Dr. Kubursi could I ask you now to consider the first part of chapter 5.2.1 (pages 167-187)?**

MH Models: Issues of Inputs, Model Logic, Model Outputs, Predictive Accuracy and Relevance.

The NYC made a number of serious allegations about defective, erroneous and stale inputs, flawed modelling structures particularly in the hydrology framework, manipulation of input and output data by Front Office, wrong forecasts, inappropriate use of the model outputs in power trading and FTR bids, the concealment of model data and results rendering the model a “black box”.

Furthermore, the Consultant claims that the Front Office engages in self-evaluation without any vetting and validation by Middle Office raising serious issues about the lack of checks and balances in reviewing and validating the models, inconsistencies among the models inputs and outputs; HERMES and SPLASH use different model parameters, inappropriate use of the models in risk assessment, and the lack of any contribution to risk mitigation especially in PRISM. The Consultant also presents a number of estimates of the costs these mistakes would entail for MH and the rate payers of Manitoba.

The Consultant claims that not using current market prices in HERMES has resulted in inappropriate water releases that sub-optimised operations, resulted in lower revenues in the range of millions of dollars, and exposed MH to greater financial risks. Furthermore, the Consultant alleges that the prices used in the Generation Estimate Report and those used in HERMES are different. This gives rise to different financial results confusing decisions and engendering inefficiency at MH. The Consultant is particularly unhappy about the current MH use of antecedent forecasting. NYC believes that this method can be improved by back-testing and disregarding water flow data before 1942. Another allegation is about the critical assumption in SPLASH of perfect foresight, where the model assumes lake ending water levels that cannot be expected in the real world, raising concerns over using the SPLASH model to estimate the cost of drought. Furthermore, NYC alleges that there are serious discrepancies between SPLASH and HERMES in regard to lake level balances which has resulted in different financial forecasts used in the IFF.

Several reviews of the Consultant’s claims were made by MH and these are in the 4th, 5th, 6th, 7th, 8th and 9th documents above. KPMG’s report has also addressed each of these allegations in detail and in many respects their Report summarizes and extends MH’s reviews. Other reports have not addressed directly the NYC’s allegations but have contributed to the issues raised by the NYC. For example, the ICF International Report (#12) deals with most issues of risk management at MH but it devoted a very short section to HERMES, SPLASH and PRISM (ICF, PP.118-120).

11(d) **Dr. Kubursi, would you then summarize your findings regarding these concerns of the NYC?**

The discussion below examines the different arguments advanced by MH, KPMG and others in response to the concerns and issues raised by the Consultant and KM's evaluation and findings. We begin with model inputs, then model structure, and finally model results, uses and implications.

Model Inputs: Prices

Finding 1:

Prices in HERMES are not stale; they are based on adjusted forecasts from a reputable forecast provider. Making adjustments to expert forecasts is reasonable and necessary but MH may wish to be more formal, transparent and to document the adjustments it makes. As well, MH may have to consider an alternative to purchase forecasts that uses forward price curves (this could be a complementary exercise). NYC has raised a valid point about using the forward price curve alternative and the need for using the same price inputs in the Generation Estimate report, HERMES and SPLASH, but has not been justified in her general pronouncements on using stale and erroneous prices

Model Inputs: Historical Water Flow Data

Finding 2:

The Consultant claims that the accuracy of the historical water flow data before 1942 is not high. However, in our opinion, to discard this series is unjustified. The use of the historical series as if it is the only reliable series on which to base calculations of dependable energy is also not recommended. By drawing over a 100 different samples of 94 year flows generated by a statistical process AR (3), which we have complemented by an extreme value distribution, we have demonstrated that the minimum of the actual historical series is consistent with the average of all the minima computed from the stochastically generated series.

Model Inputs: Energy Coefficients

Finding 3:

Different production coefficients in HERMES and SPLASH are a problem. This problem pertains to the nonlinearity of the generation equation that links water flows to energy and the time strip differences between the two systems. Harmonising the two systems on a common platform will minimize these discrepancies. The revenue losses due to this problem are limited and nowhere close to NYC's exaggerated calculation of \$26 million.

Flawed Modeling Structures

Finding 4:

HERMES, SPLASH and PRISM are indispensable operational, planning and risk assessment tools at MH. These decision support tools are consistent with the standard systems currently used in many leading utilities in North America. They

can be expanded, harmonized, and integrated. They should be reviewed internally and externally and upgraded and updated regularly. BC Hydro and Hydro Quebec have or are moving to dynamic and stochastic systems: MH may wish to follow suit. A hydrological sub-model to complement HERMES and even SPLASH should be considered seriously as water management issues become more complicated under possible climatic changes.

Model Governance

Finding 5:

There is wide agreement among the reviewers of the models (KPMG, RiskAdvisory, KM and others) that the systems require formal documentation, more staff should be trained on using and supporting the systems, that external reviews are needed, and that the Middle Office should be involved (particularly in verifying and checking the results). The PRISM model should also be run in the Middle Office.

Model Output: Lake Balances

Finding 6:

Notwithstanding the small dollar amount of discrepancy between the Generation Estimate and HERMES solutions, these discrepancies raise concern about the accuracy of the model and the reporting system. The real problem is more profound. HERMES and SPLASH are static models and do not handle time in a manner consistent with dynamic programming. MH may wish to consider some of the existing dynamic programming systems in use at similar utilities in North America.

Model Output: Predictive Accuracy

Finding 7:

The predictive accuracy of HERMES can be improved. The antecedent forecasts need to be reviewed. Back-testing should be used. The practice of continuous forecast reviews has definite benefits.

Model Use: Utility and Relevance

Finding 8:

HERMES is not directly linked to the trading floor and its forecasts are not used as bids on the floor. But whether HERMES is relied upon to inform decisions in the opportunity market is another matter; models are useful tools for informing users' decisions, not replacing them. It makes sense, however, to dispel this concern by streamlining and documenting trading decisions and practices.

Volumetric and Drought Risks

Finding 9:

The costs of a 5 year drought are in the order of magnitude used by MH rather than those calculated by the Consultant and the inclusion of other risk factors increases measurably the drought costs. It is also clear that the water flow data are serially

correlated and that a statistical process confirms that Manitoba Hydro is correctly using the low flow years in 1937-1942 as the basis of its dependable energy calculations. We found that the actual minimum lies roughly in the middle of our 95% intervals, and the means and medians of our simulated minima are greater than the actual minimum. On the one hand, this reassures us that the use of the actual minimum as a kind of benchmark worst-possible-case scenario is not unduly optimistic or pessimistic. On the other hand, because we find that the 95% intervals are fairly wide, we wish to caution that an over-reliance on the actual minimum could result in a mind-set in which it is not necessary to consider the possibility of even worse outcomes, or indeed more beneficial water flow conditions. The totally-different AR and EVT approaches provided very similar 95% intervals, which we consider to be an important check on the sensitivity of the results to the choice of model. The same AR simulation method produces simulated five-year water flow minima within the same 94-year periods. Again, we find that the actual minimum is very close to the mean of the simulated minima, which is again reassuring, but we note that the 95% intervals are still fairly wide. The lowest five-year event in the next 94-year period may be very different from the one observed in the previous 94 years – the averaging-out effect in switching the outcome from one year to five years makes the outcome less severe, but no less variable. We also suggest an AR model for monthly data that accommodates the strong seasonal patterns in monthly flows. We found a square-root transformation resulted in a model with better residual diagnostics tests, and found that the actual minimum is a worse outcome than the average of the simulated minima.

MH Risk Governance Issues

Finding 10:

ICF International, Dr. Bhattachrya, KPMG, RiskAdvisory and KM all share the general appreciation that MH's Middle Office is evolving and that major progress has been made towards best practice. We all also recognize that much is needed in terms of strengthening the HR expertise set at the Middle Office, the independence of its functions, the MTM measures of all risks, the expansion of risk limits standards and process control limitations to all aspects of MH functions, the development of an Internal Responsibility Matrix, the need for quantification of risks at Middle Office, and its involvement in contract risk assessment. Most of us recognize that there is some merit in NYC's comments about risk governance issues with respect to the independence of the Middle Office and the greater need for oversight, but we all disagree with her claims of lack of competence in the CRMC, and the concealment and manipulation of data by the Front Office.

11(e) **Dr. Kubursi, could I ask you to similarly review in overall terms chapter 5**

Sections 5.2.3 and 5.2.4 of the report (at pages 191-220)?

This section lists the risk sources faced by MH as identified in various reports.

They include the following sources: Volumetric / Drought, Long Term Contracts, Export Price, Congestion Price, Natural Gas Price, Transmission , Load Forecasting , Exchange Rate , and Interest Rate.

Many of these risks are correlated with long term contracts risks.

MH Risk Identification, Control, and Mitigation

There is a wide divergence among the reports in terms of their coverage of risks. But a common list can be constructed, and this includes a small subset of events that have high probability of occurrence and large consequences. The following risks are included in this list:

- Volumetric / Drought Risks
- Long Term Contracts Risks
- Export Price Risks
- Congestion Price Risks
- Natural Gas Price Risks
- Transmission Risks
- Load Forecasting Risks
- Exchange Rate Risks
- Interest Rate Risks

The common theme among these risks is their association with long term contracts. A significant number of the risks listed above are correlated with the long term contracts risks.

The discussion will be organized around the following questions and themes:

First, the appropriateness, from a long-term business strategy and risk exposure perspective, of Manitoba Hydro entering into long-term firm contracts 20 or 30 years into the future.

Second, the adequacy of price that Manitoba Hydro derives (or will derive) from export sale transactions in both the long-term firm and the short-term opportunity sales.

Third, the adequacy of curtailment and other measures negotiated in the new contracts to reduce the risk exposure of MH during a drought.

Fourth, the risks assumed by Manitoba Hydro in selling long-term firm energy from

dependable resources considering volumetric risks and the obligation to meet domestic load.

Fifth, the extent to which Manitoba Hydro should be involved in pure merchant energy trading transactions.

ICF/KPMG Claims

ICF International has studied this issue thoroughly and has produced strong arguments in favour of long term export sales of firm energy and expanding the system through new massive investments. As a matter of fact, ICF has argued that the two are inseparable. The arguments of ICF have been accepted by and included in those of KPMG. We will present these arguments followed by the Consultants opposing views. We will summarize our findings and state our position on these issues.

The arguments of ICF in favour of this strategy are provided below. When KPMG added a new argument to the original ICF ones, it will be recognized in situ. **First**, there is the issue of surplus of power. ICF argues that even without additional investment in hydroelectric power plants, MH will have surplus power for sale, and the only feasible market is the export market. Also, exports are a far larger share of generation for MH compared to other Canadian utilities exceeding those of Quebec, BC, Ontario and New Brunswick with a share of over 31% of total generation. In other words, the issue is not *whether*, but *how* to be involved in exports. The fact that hydro surplus is variable complicates the management of the MH export business, but does not change the imperative to maximize value and dispose of the surplus for revenue.

Second, the involvement of MH in the export market is a natural consequence of its early involvement in this market and the acquisition of knowledge and expertise in this market. ICF specifically argues that MH's extensive historical experience has facilitated the development of sophisticated structures and capabilities to manage exports and hydro variability. These structures continue to develop and improve and should not be wasted.

Third, success in the export market is a major reason why MH has the lowest domestic electricity rates in Canada and North America. ICF argues that export prices greatly exceed MH's embedded generation costs, and the revenues are used to decrease domestic rates and/or to provide the financial capacity to withstand droughts without rate shocks or heavy use of additional Province backed financing. In this way exports, are part of MH's risk mitigation strategy.

Fourth, ICF believes that MH's proposal to enter into new long-term firm contracts to export hydro power backed by the accelerated construction of new hydro facilities will provide several types of benefits, including lower MH rates to domestic consumers than would otherwise be the case. To the extent that the proposed

prices will on average be above MH's costs and average expected spot prices, large surpluses will accrue to MH. ICF quote recent MH estimates that show that two of the three proposed long-term firm contracts will provide savings of \$153 million on a present value basis by 2041.

Fifth, ICF believes that the savings reported above are very conservative in that they address only two of the three long-term firm contracts. They also do not account for the up to \$2 billion (Canadian, as expended nominal dollars) in transmission costs that the buying US utilities will expend for the construction of expanded transmission between the utilities and the Canadian border. In the absence of long term contracts, MH would likely bear the majority of these costs. These transmission linkages can be crucial for the Corporation in the event of a drought that is worse than the worst-on-record, or if there are changes in reliability requirements under NERC rules. For example, Hydro Quebec is effectively paying for new DC line construction in New England to support its exports. Finally, the calculation does not factor in the benefits of lower price volatility, decreased risk of rate shocks and the decreased financial stress on MH compared to spot sales.

Sixth, MISO can raise questions about the reliability of existing capacity and transmission capabilities of MH. Since the passage of the US 2005 Energy Policy Act and subsequent regulations, US transmission entities increasingly face enforceable centralized standards for reliability. There is a risk that MISO might conclude that the current transmission system's export capabilities are not robust enough to consider MH exports to be firm. This can lead to either a decrease in export pricing by changing their status from firm to non-firm energy or MH would have to pay for the construction of new lines. But, even if MH were willing to make these investments in transmission, it is unlikely that MH could get the necessary approvals and permits needed to have the transmission built in the US without the active support of the buying US utilities and it certainly would be much more expensive than having the US utilities paying for construction. It is clear that the construction of the new transmission lines by the buying U.S. utilities enhances MH's firm export capability.

Seventh, the expansion of hydroelectric generation capacity, combined with long-term firm contracts, is an advantage for Manitoba as it permits MH to avoid the risks involved in developing fossil fuel power plants. There has been already strong opposition to and limits on the operation of MH's single coal plant that is slated for closure in 2018. Were MH to pursue alternative capacity expansion such as fossil plant development, this could only be done subject to the legislative restriction that coal can only be used to support emergency operations, and there is a risk that opposition to and the difficulty of sitting and permitting, would eliminate the fossil fuel option entirely. Furthermore, there would be increased exposure to fuel price and environmental regulatory risk.

Ninth, MH considers developing a sizeable retained earning cushion (equity) to

help it mitigate risks of unforeseen but highly probable droughts of long duration and intense severity as a secure way to protect it against the necessity of large rate increase or having to borrow large amounts that need to be guaranteed by the province. This mitigation plan causes in part MH to accept a reasonable level of risk exposure associated with exports. It is also to be noted that MH is actively working to decrease transmission related risks, and has a mixed contract-spot sales strategy designed to limit volatility while still having exposure to market.

Tenth, MH has long term financing needs for expanding its future power generation capacity. These capital expansion plans involve long-term fixed rate debt and fixed-debt service payments. Raising this debt is facilitated by a steady and predictable flow of earnings which also help in negotiating lower financing rates. This steady and predictable stream of earnings will also be used to defray the fixed-debt service and support MH's ability to finance its capital expansion program. These capital expansion projects are undertaken now, ahead of their need, to meet Manitoba load in the hope that the surplus firm energy they produce can be used to finance these developments so that they become available for Manitobans when they will be needed at little or no sacrifice to them.

Eleventh, with large fixed costs and low variable costs, steady and less volatile revenues are needed to synchronize and match costs and revenues.

Twelfth, the export proceeds from long term export sales are in US dollars. Imports, if and when needed, have to be paid for in US dollars. Furthermore, debt obligations are primarily in US dollars. The US dollar denominated export proceeds act as a good hedge for currency fluctuations. The exchange rate changes have been very wide in the past few years and are likely to remain a feature of the future.

Thirteenth, MH sells electricity abroad in both the opportunity market and through long term firm contracts. This mixed and balanced (50% in the opportunity market and 50% in firm long term contracts) portfolio is itself a risk mitigation measure. It provides revenue stability as well as limits exposure to firm commitments. It avoids seller regrets in the event that future prices exceed the fixed contract prices.

Fourteenth, the large capital projects to be undertaken by MH will act to pre-empt further expansions in the US. With large wind projects expected in the near future, it is a strategic imperative to stake a claim in the market ahead of others plan to expand.

Serious Questions

The arguments above make a number of claims and raise a number of issues. Are export revenues subsidizing Manitoba's rates? Are the risks embedded in these contracts sufficiently low and mitigated by MH? Can the terms of these contracts be improved in favour of MH? Is the new capital expansion program warranted and necessary? Is timing of the capital expansion program staggered enough and

appropriately? Are the negotiated long term prices in the contracts high enough and above likely opportunity prices? Is the expectation of more stringent environmental measures realistic? Is MH capturing all the rents in the environmental attributes? Is the transmission capacity squandered on long term contracts instead of yielding to more profitable short term opportunity trading?

NYC Questions

Questions of this nature have been raised by some of the reports under review and in particular, by the Consultant. More than 150 points of her 280 are devoted to long term contracts that she believes are exposing MH to risks that exceed by far the drought risks. She even claims that drought risks are exaggerated to mask the exposure embedded in long term contracts and other operational inefficiencies. A sample of her concerns (many of the claims are repeated several times) is discussed below:

1. MH has erroneously identified "Drought Risk" as the primary source of financial exposure to the Corporation. It should be "Long Term Contract
2. MH has not sufficiently addressed the market changes inherent in the US deregulation. In particular, the Contracts offered to US counterparts have been (and continue to be) priced in a manner that is no longer consistent or competitive with deregulation prices. MH continues to base its contract prices on stale formulas that lead to under valuing / mis-pricing its energy.
3. The Consultant's concern is not about the strategy to sell forward, as it is the pricing formula mechanisms and their disconnect to market prices and market risk that raise serious concerns.
4. The Consultant believes that MISO cash prices were higher than the contract prices, noting that FY 06/07 is a case in point.
5. The Consultant estimates a half a billion dollar loss on the Long Term Contracts (LTC) that could have been used more appropriately to build risk capital (10).
6. The Market Risk Capital and Tolerances are not being set around MH's LTC.
7. Responsible risk management would mandate Market Risk Capital Adequacy prior to the execution and signing of LTC.
8. NYC recommended the immediate ceasing of the Export Power Market contracts until risk capital adequacy is obtained.
9. Contracts are signed without Middle Office review.
10. The buy-back commitment in the LTC of a single counterparty could top \$700 million to support paltry revenue of less than \$20 million (24).
11. While MH has built its business on "preserving long term relationships" with key business customers, it was noted that during the drought in 2003/04 none of the counterparties offered any discounts or price breaks to it. On the contrary it was those that traded in the short term with MH that offered price discounts.
12. The sale vs. no-sale scenario is incorrect and it leads to incorrect analysis of the risks and returns to Manitoba rate-payers.

13. The Consultant believes that MH uses the wrong components of energy in its computation of dependable energy.
14. The Consultant does not accept that the new generation will increase the dependable energy supply and argues it will do nothing to relieve the over sold position.
15. Losses to MH could easily exceed \$310 million and be as high as \$700 million in a single year just to support the LTC even when prices are mild.
16. The firm-commitment book contains 850 MW of export power sales to a single counterparty and this is the source of concentration of an excessive amount of the Corporation's market-risk exposure.
17. Diversity contracts should be renegotiated or usurped with more modern current deregulation replacements with other counterparties.

11(f) **Would you comment on these concerns:**

Finding 11

There are many benefits for MH to be in the export market and specifically, the long term fixed price firm exports market. The long list advanced by KPMG and ICF outlined these benefits which include: diversification of the export portfolio, matching fixed costs to fixed revenues, guaranteeing secure investment in transmission infrastructure by counterparties and qualifying for priority transmission rights, pre-empting excess capacity by competitors, guaranteeing access to long term finance on favourable terms, raising export revenues in US dollars to defray import and debt costs in the same currency (providing MH a hedge against exchange rate fluctuations), greater access to firm imports when needed, and a host of other advantages. Even the Consultant admits that the issue is not selling in forward markets; the benefits from this would outweigh costs

Finding 12:

Contract prices embedded in long term contracts are sufficiently higher than historical average spot MISO prices. These prices are carefully constructed using weighted long term forecasts and hopefully estimates of the long run marginal cost of counterparties. The export prices are higher than long run marginal cost of MH and average total cost. This suggests that export revenues can be relied upon to subsidize domestic rates when they are higher than import prices. We are not in a position to verify the claim in the Cost of Service that exports account for only 13% of total cost but we can verify that they contribute 32% of total revenue

Finding 13

The expanded capacity when Keeyask and Conawapa are completed will increase dependable energy and sales in the long term at higher prices than spot MISO prices will increase revenues. Expected declines in spot prices beyond 2011 will make these contracts more valuable. High import prices will remain a threat in time of shortages but new contract limit prices on these imports will define an upset price

for MH. The inclusion of wind and out of money thermal energy in dependable energy is a stretch but they represent such a small portion of total generation that their inclusion or exclusion is not a material concern

Finding 14

The negotiated contract prices in the new contracts or binding term sheets are higher than the weighted consensus price forecasts of the 5 international forecasters and the escalation clauses are firmly structured to protect the contracts' real prices in the future. At this point in time, the contracted prices are sufficient to raise significant revenues for MH over its costs. The upset price on importing energy in one the contracts will play a modest role in protecting MH from paying congestion prices in the event of a shortage. But the major achievements in these contracts are the curtailment provisions in the new contracts that could effectively decrease MH's firm export commitments by 29% and 19% of the total volume in times of adverse water conditions

Finding 15:

The Consultant's calculations of the probability of a severe drought and the magnitude of drought losses are glaringly low and those that may result from LTC commitments considerably higher than those that reasonable calculations would produce. The need, however, for adequate risk capital to mitigate against MH's LTC risk exposures is a serious concern

12(a) **Turning to chapter 6 at page 225 of the report, Dr. Kubursi would you summarize the purpose of this chapter and the methodology utilized?**

Droughts of any severity and many other risks, separately or in combination, can adversely impact the net revenues of MH. To manage and protect its financial stability, MH must mitigate drought risks and simultaneously monitor all other potential risks that can threaten and prevent MH from realizing its business objectives and the optimization of its net revenues.

Most of the activities of MH involve minor or low risks because they are of short term durations and have limited consequences. There are, however, some major transactions and events that have high probability of occurrence and large consequences. Droughts, long term contracts, and expansions of capacity have major consequences on net revenue and have reasonably high probabilities of occurrence. Major events and, therefore, large risks may occur in clusters. The drought in 2004 was accompanied by high import prices. Risks must then be quantified separately and in combinations having regard for their correlations and inter-relationships.

12(b) **Dr. Kubursi would you explain what was found as set out at chapter 6.2, 6.3 and 6.4 of the report (at pages 226-246)?**

Quantification of MH Risks

The calculations of the risk exposure based on Statistics Canada data can vary from those for fiscal years in the IFF, so the absolute magnitudes of these calculations may have to be used with caution. The relative and incremental changes in these magnitudes are; however, relevant and can shed light on the interactions among the different variables.

We have prepared a large set of simulations; each one is constructed to deal with a relevant change in a variable of concern. The calculations are all probabilistic in that an embedded probability distribution was chosen to reflect the formation of these variables. Monte Carlo estimates were calculated for the final net revenue equation. In total we have estimated the risk exposure of 15 different variables on MH's net revenue. We started with defining a Base Case to benchmark the behaviour of the system under average conditions that prevailed between 2001 and 2007. The averages are simple averages calculated from the data in Table 6.1.

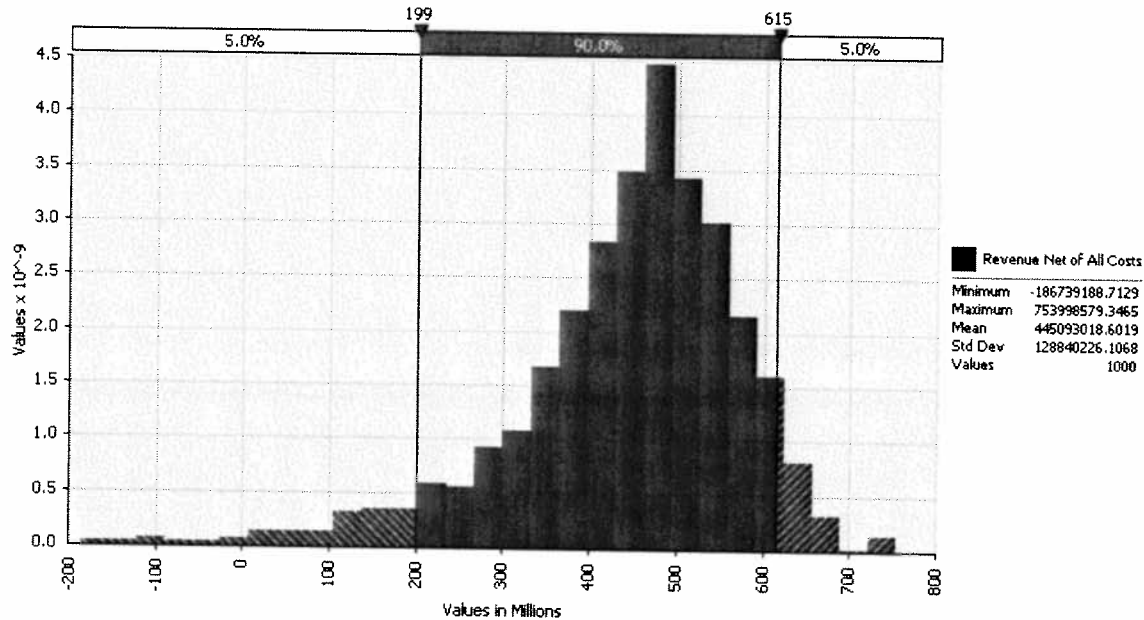
**Table 6.1 – Manitoba Hydro Generation, Exports, Imports,
Operating Revenues, Expenses and Debt. 2001-2007**

	2001	2002	2003	2004	2005	2006	2007
Exchange Rate	1.5484	1.5704	1.4015	1.3015	1.2116	1.1341	1.0748
Load (GWh)	21,450	22,470	19,455	20,309	21,918	21,068	22,235
Unallocated Energy	3,750	4,386	1,048	1,466	1,880	2,365	2,326
Net Load	17,700	18,084	18,407	18,843	20,038	18,703	19,909
Domestic Price	4.84	4.93	4.81	4.88	4.86	4.90	5.10
Exports (GWh)	12,648	9,836	7,907	10,166	15,400	14,511	12,845
Firm	5,380	4,678	3,655	4,223	3,808	3,427	3,538
Non-Firm	4,378	2,732	587	2,494	8,291	8,886	7,525
Provincial Exports Firm	1,750	1,999	3,665	2,923	1,896	1,392	1,232
Provincial Exports Non-Firm	1,140	427	-	526	1,405	806	550
Provincial Imports - Total	2,890	2,426	3,665	3,449	3,301	2,198	1,782
Export Price							
Firm (US)	3.97	3.66	4.50	4.39	4.70	5.18	14.63
Non-Firm (US)	3.02	2.76	4.02	4.49	4.06	4.40	4.33
Firm (CDN)	6.14	5.74	6.31	5.72	5.69	5.88	15.72
Non-Firm (CDN)	4.67	4.33	5.63	5.84	4.92	4.99	4.65
Generation	34,098	32,306	27,362	30,475	37,318	35,579	35,080
Gross Domestic Revenue	856,703,087	891,517,142	885,365,397	919,516,928	973,853,847	916,423,088	1,015,377,462
Revenues from US Exports	535,439,197	387,288,907	263,583,469	387,027,445	624,689,571	644,733,114	906,531,354
Revenues from Other Provinces	160,688,000	133,231,700	231,261,500	197,914,000	177,008,400	122,069,000	219,245,400
Gross Revenues	1,552,830,284	1,412,037,749	1,380,210,365	1,504,458,373	1,775,551,818	1,683,225,202	2,141,154,216
Imports Total (GWh)	853	2,485	6,439	2,820	297	1,121	708
Imports from Provinces	195	342	533	266	66	302	174
Imports from US	658	2,143	5,906	2,554	231	819	534
Import Price (US)	3.97	1.92	3.05	4.83	3.44	3.94	4.57
Import Price (CDN)	6.14	3.01	4.28	6.28	4.17	4.47	4.91
Import Cost	52,421,234	74,909,250	275,268,800	177,255,497	12,380,058	50,094,897	34,772,604
Net Revenue (net of imports)	1,500,409,050	1,337,128,499	1,104,941,566	1,327,202,876	1,763,171,760	1,633,130,305	2,106,381,612
Marginal Cost (\$/MWh)	1.09	1.53	3.26	1.52	1.30	0.98	1.04
Average Variable Cost	14.61	14.88	22.42	18.00	15.38	18.21	15.12
Average Total Cost	25.90	28.03	55.84	33.21	29.06	33.67	28.37
Operating Expenses	808,345,000	837,548,000	1,323,114,000	897,480,000	988,592,000	1,124,067,000	944,663,000
Wages and Salaries	247,249,000	196,265,000	276,506,000	301,733,000	312,317,000	349,038,000	348,627,000
Cost of Fuel Used	10,464,000	21,999,000	53,361,000	15,797,000	16,464,000	22,564,000	18,506,000
Cost of Material Used	23,477,000	23,815,000	23,979,000	25,384,000	27,831,000	10,120,000	16,039,000
Cost of Purchased Services	13,617,000	21,314,000	24,776,000	9,990,000	6,630,000	5,793,000	9,888,000
Cost of Repair and Maintenance	6,400,000	9,458,000	9,690,000	11,917,000	12,334,000	11,808,000	13,643,000
Royalty Expenses	112,784,000	102,856,000	71,455,000	47,542,000	68,103,000	112,497,000	13,767,000
Indirect Taxes	45,942,000	48,411,000	50,165,000	51,429,000	53,722,000	55,024,000	57,326,000
Other Expenses	-3,880,000	20,618,000	21,254,000	22,761,000	25,693,000	40,888,000	25,714,000
Electricity Purchased	108,388,000	129,171,000	515,570,000	119,659,000	162,398,000	203,648,000	115,224,000
Depreciation	243,904,000	263,641,000	276,358,000	291,268,000	303,100,000	312,687,000	325,929,000
Net Operating Income	692,064,050	499,580,499	-218,172,434	429,722,876	774,579,760	509,063,305	1,161,718,612
Long Term Debt (CDN)	7,269,896,000	6,924,890,000	7,114,613,000	7,047,576,000	7,051,016,000	6,822,361,000	7,217,181,000
Interest on L.T. Debt (CDN)	462,263,000	458,465,000	454,711,000	472,606,000	473,148,000	472,234,000	406,235,000
Effective Rate	6.36%	6.62%	6.39%	6.71%	6.71%	6.92%	5.63%
Net Operating Income (After Debt Chargers)	229,801,050	41,115,499	-672,883,434	-42,883,124	301,431,760	36,829,305	755,483,612

Sources: Statistics Canada, Annual Electric Power Generation, Transmission and Distribution Reports.
and http://www.bankofcanada.ca/en/rates/exchange_avg.pdf.html

Base Case

Figure 6.1 – Net Revenues, Base Case, Average Flows



The base case net revenue has a mean of about \$445 million, a low of -\$187 and a maximum of \$754 million. The distribution is tight around the mean but not symmetrical with a thick left tail. Net revenue is positive with \$199 million at 5% confidence level and \$615 million at the 95% confidence level.

Low Flow

The low flow (drought) scenario results show a drastic loss in net revenue; the mean losses are in the order of \$343 million, but when compared to the base case this represents a loss of \$788 (\$343 million plus \$445 million) million and this is the first year (Table 6.2).

It is interesting that the mean losses almost approximate the actual losses in 2003/04 but this resemblance is coincidental. The next scenario involved constructing a case with lower water flows (we used the water flows from our statistical series at the 2.5% quantile of all minima). But we also allowed curtailment of exports (reduced by 29%); all other variables were left at their average values and the appropriate distributions. It is highly interesting that the mean losses are lower than those associated with actual minimum. The mean losses are \$227 million and at an opportunity cost of \$722 million. This is lower than the actual minimum costs by over \$66 million (Table 6.2).

Risks can be expected to be compounded, that is one risk is augmented by another. In the next scenario we address the costs of a drought equal in severity to the one in 1940 but also impose high import prices (at about \$120 MWh). The mean losses rise quickly to \$755 million and the opportunity losses to \$1.2 billion.

**Table 6.2 – Quantification of Manitoba Hydro Risks
(Millions of Dollars)**

Scenario	Impact on Net Revenue Without Interest Costs	Net Impact
Base Case	\$445	
Drought (1940 Flows)	-\$343	-\$788
Drought (More Severe than 1940) (Minimum at 2.5% Quantile, with Curtailment)	-\$277	-\$722
Drought (1940 Flows, High Import Prices)	-\$755	-\$1,200
Drought (1940 Flows, High Export Prices)	\$114	-\$331
Base Case with Wind Variation	\$445	\$0
10% Increase in Load with Average Import Prices	\$448	\$3
10% Increase in Load with High Import Prices	\$48	-\$397
10% Increase in Wage Costs	\$416	-\$29
10% Increase in Fuel Prices	\$442	-\$3
10% Increase in Purchased Materials Costs	\$443	-\$2
10% Increase in Cost of Purchased Electricity	\$425	-\$20
10% Exchange Rate Depreciation of Canadian Dollar	\$478	\$33
10% Exchange Rate Appreciation of Canadian Dollar	\$412	-\$33

Source: Table 6.1 and @Risk Model

Probability of Drought

The probability of a five year drought equal or worse than the 1937-1943 drought and that of a seven year drought are discussed in the following paragraph:

The estimated annual AR(3) model was simulated using re-sampled residuals for one million years. For the five-year droughts, every consecutive five-year period from this one million year period was averaged, producing 999,996 such five-year averages. The number of these averages that were less than the observed average water flow during the 1987-91 and 1937-1941 droughts were counted. The proportion of these five-year averages that were less than the 1987-1991 average was .013833 and the proportion less than the 1937-41 average were .008466. A similar exercise with 7-year averages found that the proportion of simulated 7-year averages that were less than the 7-year average water flow observed during the 1936-1942 period was .012840.

Summarizing:

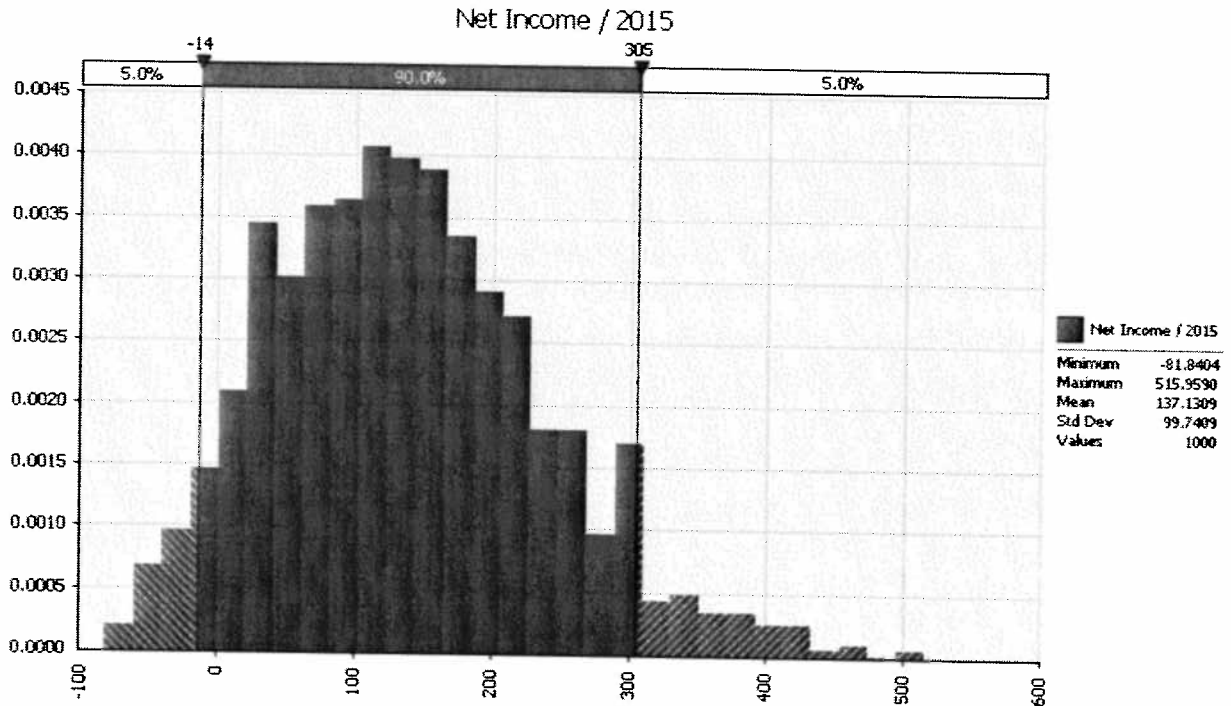
The probability that a randomly chosen five-year period's average water flow is less than the average water flow observed during 1987-1991 is .013833 (one in 72).

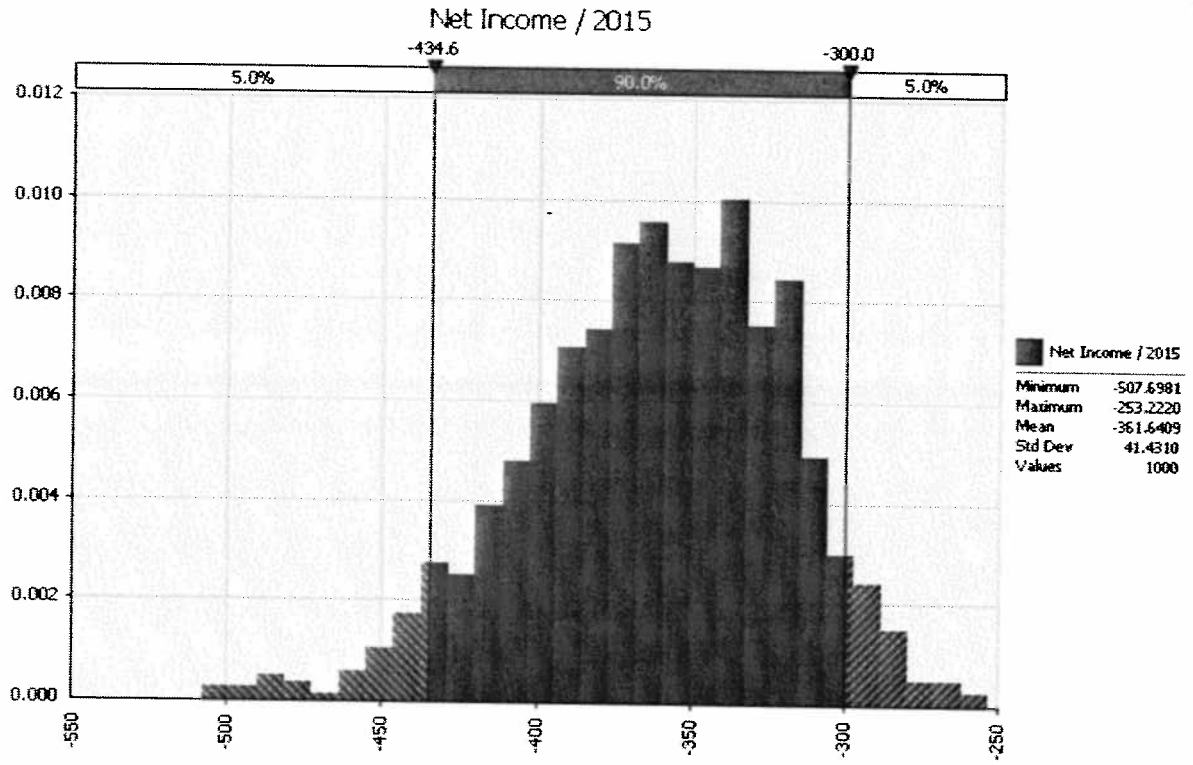
The probability that a randomly chosen five-year period's average water flow is less

than the average water flow observed during 1937-1941 is .008466 (one in 118). The probability that a randomly chosen seven-year period's average water flow is less than the average water flow observed during 1937-1941 is .012840 (one in 78). The costs of a five year drought under bench mark conditions are \$3, 342.3 million and \$4,548.3 million.

Impacts of Capital Cost Changes

We started with the benchmark conditions in 2015 and 2020 and introduced the volumetric declines without altering any of the other assumptions. For 2015, a drought would result in an average annual loss in net income of \$499 million and \$712 million in 2020. The results are shown in the figures below at different confidence levels. KM confirm that they are not aware of any curtailments in the three cases under question (b) above.





- 12(c) **Dr. Magee, could I ask you to do the same with respect to chapter 6.5 found at pages 247-260?**

Chapter 6.5 contains a series of pictures portraying the distributions (probability density functions) that were assigned to the variables that are treated as random in the simulation exercise reported on in the rest of chapter 6.

- 12(d) **Would you please reference your response to the latter part of the Rebuttal of MH.**

(-Reference Section D. pp. 6 to 8 of Response Papers of KM)

13. **Dr. Magee, I note that there is a chapter 7 referenced as “conclusions and recommendations.” Would you please explain what this consists of?**

This chapter begins by listing the terms of reference, and then summarizes the rest of our Report, including our findings and recommendations.

14. **Drs. Kubursi and Magee, in turning to the terms of reference, would you advise whether your report is intended to cover the entire tasks set by the PUB?**

Yes. The terms of reference are very broad. Our report reflects the fact that we are economists. Many of our conclusions are based on the use of economic models to combine various risk factors and trace out their implications under a variety of economic scenarios, in a unified framework. We recognize that a different team, with a different professional background, could take the same terms of reference, be exposed to the same information, try just as hard as we have to satisfy the terms of reference, yet produce a very different report.

15. I'd like to turn to several questions raised by the chairman of the PUB at the conclusion of the testimony of the KPMG panel.

(1) *"From your review of Hydro's forecast, results, operations, and models, have you formed an opinion on the advisability of Manitoba Hydro's major capital plans as described and as supported by export sales expectations, the latter represented by export term sheets entered into several years ago?"*

DR. KUBURSI:

We have to consider two options and two states of the economy. The intersection of these considerations gives rise to four possibilities (of course this is a simplification and many alternatives could be formulated but this would complicate the presentation). The two preferred options are along the diagonal of this Table (expand when the conditions are favourable and refrain from expanding when they are not). The off-diagonal cases involve large actual losses or large lost opportunities and a possible failure to meet the expected load.

	Favourable	Not Favourable
Expand	High returns	Major losses
Do Not Expand	Lost Opportunities and possible failure to meet load	Avoided Costs

The favourable conditions include a solid economic recovery in both the US and Canada, high export (MISO) electricity rates captured mainly in firm long term contracts, high carbon taxes on CO2 emissions, low inflation rates, low interest rates for most of the period, a depreciating Canadian dollar, high natural gas

prices, and good water conditions. The unfavourable conditions are the opposites of these favourable conditions.

The real issue boils down to the nature of answers to three questions. First, what is the probability of experiencing favourable conditions? Second, what is the ranking of the listed conditions (e.g., a high growth rate of GDP vs. a high interest rate and a high inflation rate, etc.)? What are the terms that MH can devise and bind partner parties to pay for its electricity in the future?

Some of these factors are not independent (i.e., they are correlated). The rankings are important as some may turn out to be favourable but others may become adverse.

At this time, we have a slow recovery, low MISO electricity rates, low natural gas prices, a highly appreciated Canadian dollar, and no carbon taxes of any significance, but we also have low interest rates, low inflation, good water conditions, and good term sheets.

If were to project these conditions to prevail over the medium term but not the long term, this would argue in favour of postponement or staggering the expansion plan. If these adverse conditions were to remain endemic to the system this would argue perhaps for scrapping the expansion.

If on the other hand the likelihood is for the prevailing conditions to change in favourable ways, then indeed expansion may become profitable.

What we have sketched so far by way of a decision structure is obvious and elementary. The complexity lies in trying to forecast with a measure of accuracy the course of events in the next decade and beyond.

Economists do not have a good track record in forecasting accuracy; they predicted the last nine out of five recessions. But I am not deterred to make an educated guess about the likely turn of events.

Economic recovery in the consensus forecast is expected to take root and become strong in 2014 (and may be earlier) and beyond. Anybody familiar with business cycles cannot predict otherwise. Inflation rates will rise, they actually started to edge upward already, interest rates are likely to rise fuelled by economic expansion and inflation, the Canadian dollar is likely to fall moderately from its current heights as the relative costs between the US and Canada would exert their influence (there is an existing and obstinate productivity discount for Canada in the order of 20% relative to the US). It is difficult to predict the level of a carbon taxes other than to observe that the likelihood of its imposition is relatively positive with the increased (or increasing) concern about climate change. Electricity prices under these circumstances can only go upwards. I

have some major difficulty forecasting natural gas prices as the experts are evenly divided on this matter.

What emerges from all this is a mixed picture but one tilted towards the prevalence of favourable factors. Things, of course, can go wrong and have many times before. In this case it behoves MH to remain vigilant, cautious, proactive, patient and flexible. Any staggering that can be technically feasible should be fully exploited and real and hardnosed calculation should cumulatively replace hunches and speculation. The most prudent objective is to nail favourable contract prices. The stakes are extremely high, losses and rewards can be taxing.

(2) "There have been references to Hydro's IFFs. Has KM a perspective, a view, as to the adequacy of Manitoba Hydro's current and future forecast domestic rates, given the uncertainties that surround the capital asset costs and plans, and the export sales plans and prices?"

DR. MAGEE:

To finance capital expenditures of the magnitude of what is required for Conawapa, Keeyask, and Bipole III, considerable borrowing is necessary. The discounted net present value stemming from these investments is subject to a lot of uncertainty, but given a sufficiently long time horizon, it could be massively positive.

The central question when it comes to how domestic rates evolve over time is: "Who should pay, and when should they pay?" If the various interest groups can agree upon a set of scenarios regarding interest rates, investment costs, and revenue streams, then the issue of how much should be paid now and how much later can be addressed more clearly. The issue of "who should pay?" relates to if, and how much of, the investment costs should be built in to current domestic rates for various users and how much of the liabilities should fall instead on future domestic rates or, under pessimistic scenarios, on future provincial income tax liabilities for Manitobans.

(3) "Did KM consider the financial risk inherent in expending material funds for future generation additions ahead of a firm contract for export sales?"

DR. MAGEE:

Substantial financial risk is unavoidable when it comes to this expenditure decision – invest, incur large debts, and risk a weaker-than-expected energy market in the future resulting in a difficult debt situation; or do not invest, and risk foregoing huge

future revenues and inability to meet the domestic load.

The decision of the timing of these investments involves more middle-ground flexibility. It is possible that some of the uncertainty (regulatory environment, long term contracts, economic outlook, etc.) may be reduced in the next few years, in which case one could argue in favour of waiting for more information. But there are substantial costs to waiting as well, and the uncertainty level may not decline.

- (4) *"In the case of a plan to more than double the amount of assets and loans of the Utility, and with uncertainty with respect to both costs and revenues to be incurred and enjoyed, would, in your expert view, expect that in such a circumstance, debt markets would generally prefer a lower debt-equity ratio rather than a higher one?"*

DR. MAGEE:

Yes in our view they would, but they also would understand that this investment decision is extremely "lumpy" and irreversible. A high debt-equity ratio for a certain period of time may be scary but may be unavoidable and even justifiable in this industry than in many others.

- (5) *"Is it fair to suggest that KM holds that the largest risk faced by Hydro is a multi-year drought?"*

DR. MAGEE:

Experience, common sense and model simulation all show that multi-year droughts can have a huge impact on net revenues. In the long run, the losses incurred by droughts would be offset by higher net revenues from high water flow periods, and by other mitigation measures.

In net present value terms, the capital expansion decision involves larger, and largely unavoidable, risks. On the one hand, expand, and risk being unable to pay off debts if domestic loads, exports, and energy prices fail to increase sufficiently; on the other hand, do not expand, and risk failing to be able to meet the domestic load as well as losing billion of dollars in foregone export sales.

- (6) *"Is it also fair to say that KM holds that Hydro's approach to this risk is reasonable?"*

DR. MAGEE:

Yes, with room for improvement. We encourage the use of a comprehensive model

that integrates financial, hydrological, and electrical generation components, along with jointly modelling unknown future values by specifying them as random variables. We also encourage MH to consider the relative merits of different rates of capital expansion. The middle office should play a leading role in the approval process for long term contracts.

(7) *"Do you have any opinion as to whether Hydro has identified and considered carefully all available development scenarios?"*

Again, our opinion is generally positive, although we favour an evaluation of a variety of expansion timelines and their implications for debt loads and net export revenues, averaged across a judicious specification of jointly randomly assigned outcomes to the unknown prices, quantities demanded, interest rates, and so on.

16. **I would ask you, Dr. Magee, to deal overall with the criticisms of the KM Report continued in the cross-examination of the MH Panel by Mr. Byron Williams (of CAC/MSOS) at various pages of the hearing transcript.**

Pp. 5371-5373 of the transcript contains a discussion of one of the scenarios given in Table 6.2 on page 229. In this Table, we report the impact on mean net revenue when one or two of the variables have been set at specific values and the others are left to vary according to their assigned probability distributions. The discussion between Mr. Williams and Mr. Cormie focuses on the line in which the water flow is set at the 1940 (drought) level and import prices are fixed at a high level. They touch on this again on pp. 5387-88 and p.5393. They correctly point out that a probability has not been assigned to this outcome.

If readers wish to see the effects of a drought on net revenue without assuming any specific value to import prices, they can look two lines higher in the table. By comparing the losses on those two lines, \$343m and \$755m, one can see the extent to which high import prices would compound the negative effects on net revenue of a drought as compared to a similar drought when import prices follow their assigned distribution, according to our model. In short, Table 6.2 takes the model and moves variables around in different ways, assigns some variables particular values while leaving others to be randomly determined, as a way of illustrating how some of the important variables interact and affect net revenue in the model. The purpose of this particular entry (-\$755m) in Table 6.2 is to illustrate how a high import price magnifies the negative effect on net revenue of a drought. Note that on p.232 we mention "A less severe scenario postulates higher export prices almost matching long term contract prices. If this was assumed, the impact of a drought as severe as that of 1940 on net revenue will be substantially cushioned (Table 6.2 and Figure 6.5)." We were not prepared to assign any specific joint

probability to joint events (i.e., drought and high import prices). We actually were unhappy with ICF when it did that and said so in the KM Report (p. 188) and in our question 2 (a) to ICH Evidence regarding Exhibit 55 (p. 62) where ICF assigned a probability of $\frac{1}{2}$ to higher import prices assuming that these prices can only be either higher or lower than the existing prices (these of course could be much or moderately higher or strongly or moderately lower; a whole range of possibilities can arise and it is not appropriate to represent this range by a binary option). What we opted for was fit a density function on these prices and ultimately ran a Monte Carlo simulation. We did this simply to avoid specifying an unjustifiable fixed assignment of a particular probability on the likelihood of the value of a given variable (in this case import prices).

Pp. 5373-5378 contains claims of inaccuracies in Statistics Canada's data set on which the simulation exercise is calibrated. We do not take a position on the relative merits of Manitoba Hydro's data and Statistics Canada's data. Statistics Canada is a highly reputable, neutral agency, and we feel that it is appropriate and normal for us, as independent consultants, to draw our numbers from that source. We hope that any major inconsistencies can be reconciled, resulting in improved publicly available data for future use.

P.5386 of the transcript mentions the MH rebuttal passage criticizing KM's assigning opportunity sales as random. We feel that this criticism stems from the variety of uses of the term "random". In a simulation model, each variable is either assigned a fixed value or it is treated as a random variable. A random variable can be determined all or in part by other random variables, leading to correlated random variables, or it can be generated independently.

p.5379 of the transcript argues that the 7-year period for which Statistics Canada's data were available, and was used to calibrate the KM simulations, is not fully representative of the historical record, causing a bias in the results. Again, we preferred to use data from an independent source, and feel that calibrating over a recent 7-year period is sufficient to give relevant results, while acknowledging that it would have been better, if possible, to use independent data covering a longer time period for calibration. Besides, this seven year period captures the drought years 2003/04 and high water years subsequently in 2005-2007.

Overall, we are encouraged by the common ground that clearly exists between our simulation approach and the thinking of MH as represented by Mr. Cormie in this section of testimony.

Dr. Kubursi, would you comment as well?

Thank you both for all of your answers.

Appendix A

Smith

From: "Audrey Smith" <amsmith@mts.net>
To: "Bob Peters" <bobpeters@filmorearley.com>
Cc: "Audrey Smith" <amsmith@mts.net>
Sent: April-30-10 4:05 PM
Subject: Re: PUB

Hello,

I have received your letter. The PUB has not yet disbursed legal fees, therefore until such time as I am in receipt of the legal budget we cannot set up a schedule. Also, I have been advised to meet with the Board counsel first prior to the signing of any NOA's so any initial meeting will be together. Please ask the PUB for the schedule, as until we have the legal fees approval, we are not able to meet with you. We have suggested a meeting in NY at their convenience, and we are pending their response.

On 4/22/10 12:57 PM, "Audrey Smith" <amsmith@mts.net> wrote:

Dear Madam,

I am the lawyer for Dr. Alf Kubursi and Dr. Lonnie Megee who have been retained to perform an independent assessment as set out in the terms of reference attached as a schedule to Manitoba Public Utilities Board Order No. 30/10. I believe you will have been provided with that Order and those terms of reference.

I am writing at their request to inquire if it would be possible for them to meet with you at your convenience to discuss the work you have carried out on the risks and risk management and related matters faced by Manitoba Hydro.

In that regard, Drs. Kubursi and Megee have met with representatives of Manitoba Hydro, have requested and received material sets from Manitoba Hydro and from the Public Utilities Board. They have not received or otherwise been made privy to the reports which you prepared and provided to Manitoba Hydro or the report recently produced by KPMG.

Drs. Kubursi and Megee appreciate that before meeting with you, they would be required to enter into a confidentiality agreement with you.

Would you kindly contact me so that we might discuss this request.

Thank you for your attention.

Regards,
Gavin M Wood
/es

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg MB R3L 0C8
Phone: (204) 947-1830
Fax: (204) 943-0481

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

Margaret Kennedy

From: "Margaret Kennedy" <margk2@mts.net>
To: <>
Sent: May-04-10 2:41 PM
Subject: Re: PUB

Thank you for your e-mail. No, we did not receive the e-mail last week. Would you please send it again to this e-mail address (margk2@mts.net).

Margaret Kennedy
Assistant to Gavin Wood

----- Original Message -----

From: Margaret Kennedy ; samantha@timetricsrisk.com
Sent: Tuesday, May 04, 2010 1:30 PM
Subject: Re: PUB

Hi - -I responded to the email last week. Did you not receive it?

Sent via BlackBerry from T-Mobile

From: "Margaret Kennedy" <margk2@mts.net>
Date: Tue, 4 May 2010 10:19:59 -0500
To: <>
Subject: Re: PUB

Dear Madam:

On April 22, 2010, I wrote you on behalf of Dr. Atif Kubursi and Dr. Lonnie Magee, a copy of which forms part of this e-mail.

Would you kindly respond to that e-mail.

Yours truly,

Gavin Wood

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg MB R3L 0C8
Phone: (204) 947-1830
Fax: (204) 943-0461

----- Original Message -----

From: Audrey Smith
To: <>
Sent: Thursday, April 22, 2010 11:57 AM
Subject: PUB

Dear Madam,

I am the lawyer for Dr. Atif Kubursi and Dr. Lonnie Magee who have been retained to perform an independent assessment as set out in the terms of reference attached as a schedule to Manitoba Public Utilities Board Order No. 30/10. I believe you will have been provided with that Order and those terms of reference.

I am writing at their request to inquire if it would be possible for them to meet with you at your convenience to discuss the work you have carried out on the risks and risk management and related matters faced by Manitoba Hydro.

In that regard, Drs. Kubursi and Magee have met with representatives of Manitoba Hydro, have requested and received material sets from Manitoba Hydro and from the Public Utilities Board. They have not received or otherwise been made privy to the reports which you prepared and provided to Manitoba Hydro or the report recently produced by KPMG.

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Thank you for your attention.

Regards,
Gavin M Wood
/as

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg MB R3L 0C6
Phone: (204) 947-1830
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Version: 8.5.437 / Virus Database: 271.1.1/2853 - Release Date: 05/04/10 06:27:00

Margaret Kennedy

From: Margaret Kennedy <margk2@mts.net>
To: Margaret Kennedy <margk2@mts.net>
Sent: May-05-10 11:01 AM
Subject: Re: PUB

The delay is due to the fact we have not received a response from our correspondence with the Board, regarding legal fees. We have not been granted any legal costs so until such time that is approved we are in limbo.

This is of no disrespect to your experts and we send them our regards.

Once the Board approves the \$10,000 of legal costs NYC would incur, we will arrange a schedule to meet with the experts together with the PUB. As stated, it is the direction of counsel in US that someone from the Board (and/or its counsel) must be present at the initial meeting. Either that, or we need to meet with the Board (and/or its counsel) first prior to any meeting with the experts.

While we are looking forward to a meeting in NYC, the hold-up is coming from the Board. I suggest you contact them, to enquire as to when they intend to contact me.

On 5/4/10 3:41 PM, "Margaret Kennedy" <margk2@mts.net> wrote:

Thank you for your e-mail. No, we did not receive the e-mail last week. Would you please send it again to this e-mail address (margk2@mts.net).
Margaret Kennedy
Assistant to Gavin Wood

----- Original Message -----

From: Margaret Kennedy <mailto:margk2@mts.net>
To: Margaret Kennedy <mailto:margk2@mts.net>
Sent: Tuesday, May 04, 2010 1:30 PM
Subject: Re: PUB

Hi -- I responded to the email last week. Did you not receive it?
Sent via BlackBerry from T-Mobile

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Date: Tue, 4 May 2010 10:19:59 -0500
To: Margaret Kennedy <mailto:margk2@mts.net>
Subject: Re: PUB

Dear Madam:

On April 22, 2010, I wrote you on behalf of Dr. Afif Kubursi and Dr. Lonnie Magee, a copy of which forms part of this e-mail.

Would you kindly respond to that e-mail.

Yours truly,

Gavin Wood

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg MB R3L 0C8
Phone: (204) 947-1830
Fax: (204) 943-0481

----- Original Message -----

From: Audrey Smith <mailto:amksmith@mts.net>

To: Margaret Kennedy <mailto:margk2@mts.net>

Sent: Thursday, April 22, 2010 11:57 AM

Subject: PUB

Dear Madam,

I am the lawyer for Dr. Afif Kubursi and Dr. Lonnie Magee who have been retained to perform an independent assessment as set out in the terms of reference attached as a schedule to Manitoba Public Utilities Board Order No. 30/10. I believe you will have been provided with that Order and those terms of reference.

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Drs. Kubursi and Magee appreciate that before meeting with you, they would be required to enter into a confidentiality agreement with you.

Would you kindly contact me so that we might discuss this request.

Thank you for your attention.

Regards,

Gravin M Wood

/s/

Gravin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg MB R3L 0C8
Phone: (204) 947-1838
Fax: (204) 943-0481

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Version: 8.5.437 / Virus Database: 271.1.1/2853 - Release Date: 05/04/10 06:27:00

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

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et Kennedy

From: Margaret Kennedy <margk2@mts.net>
To: Margaret Kennedy <margk2@mts.net>
Sent: May-05-10 11:09 AM
Subject: FW: PUB

Here again is the letter sent last week.

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

----- Forwarded Message -----

From: Margaret Kennedy <margk2@mts.net>
Date: Fri, 30 Apr 2010 10:43:43 -0400
To: Audrey Smith <amksmith@mts.net>
Cc: Bob Peters <bobpeters@filmoraifey.com>
Conversation: PUB
Subject: Re: PUB

Hello,

I have received your letter. The PUB has not yet disbursed legal fees, therefore until such time as I am in receipt of the legal budget we cannot set up a schedule. Also, I have been advised to meet with the Board counsel first prior to the signing of any NDA's so any initial meeting will be together. Please ask the PUB for the schedule, as until we have the legal fees approval, we are not able to meet with you.

We have suggested a meeting in NY at their convenience, and we are pending their response.

On 4/22/10 12:57 PM, "Audrey Smith" <amksmith@mts.net> wrote:

Dear Madam,

I am the lawyer for Dr. Aif Kubursi and Dr. Lonnie Magee who have been retained to perform an independent assessment as set out in the terms of reference attached as a schedule to Manitoba Public Utilities Board Order No. 30/10. I believe you will have been provided with that Order and those terms of reference.

I am writing at their request to inquire if it would be possible for them to meet with you at your convenience to discuss the work you have carried out on the risks and risk management and related matters faced by Manitoba Hydro.

In that regard, Drs. Kubursi and Magee have met with representatives of Manitoba Hydro, have requested and received material sets from Manitoba Hydro and from the Public Utilities Board. They have not received or otherwise been made privy to the reports which you prepared and provided to Manitoba Hydro or the report recently produced by KPMG.

Drs. Kubursi and Magee appreciate that before meeting with you, they would be required to enter into a confidentiality agreement with you.

Would you kindly contact me so that we might discuss this request.

Thank you for your attention.

Respect,
Gavin M Wood
/ss

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg MB R3L 0C8
Phone: (204) 947-1830
Fax: (204) 943-0481

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

NYC Consultant

May 6, 2010
Letter 2, Page 1 of 4

NYC Consultant
Address on File
New York, NY

Second Letter

Gerry Gaudreau
Manitoba Public Utilities Board
Room 400, 330 Portage Avenue
Winnipeg, MB R3C 0C4
cc. Bob Peters Legal Counsel for the PUB
Cc: Us Counsel, Gavin Woods

Dated: May 6, 2010

Re: Legal Fees

Dear Mr. Gaudreau,

As per my letter on Friday April 30th please find correspondence to the Board regarding legal fees and your Order 30/10 and letter dated April 14th. We note there has been no response to our other letters leading to concern on the Board's process.

This letter summarizes my position on legal fees only. It does not discuss matters of content and violations in contract related to the preparation of the KPMG report. As you are aware the Board has in its Order 30/10 condoned a report, which was done in willful violation of trade secret and confidentiality. This leads to a lot of concern to the integrity of your process, whereby the Board has made clear it will harm a third party to benefit the public and NDP government. Legitimate government agencies do not proceed with matters that are done in willful injury to a party.

It is now very evident that before I can proceed the PUB must grant me parity in the legal fees now to partake in this process, which is being done solely for the GRA process. It is not reasonable to expect one person to do this work without legal guidance. All other experts and witnesses and interveners are being granted legal counsel. MH is adorned in and has an excessive teams of lawyers.

The PUB has sent me no less than 1800 pages of materials and is expecting me to proceed with NO counsel. At the pre-hearing conference, I also incurred legal fees at the [unnecessary] and explicit direction of your counsel Mr. Peters who insisted on running up hours of legal conversations at \$770/hr which have still not been reimbursed.

The Board's stance to willfully harm the NYC by not treating me equitably with appropriate legal counsel, just as all other participants is unfair, prejudicial and unreasonable. It is clear you are trying to harm the NYC to create an unfair advantage so that the Board and Manitoba Hydro can steal IP and reverse engineer software systems, and use an abuse of power and no fair legal fees to do achieve this.

At this time, I am about 50-60% complete with the redactions of my original four(4) reports. These reports are dated Dec 4, 2006, Jan 8, 2008, Jul 31 2008 and Sep 29, 2008. No other such work has been agreed to or timetabled by the NYC. I might also point out, that I am not subject to your jurisdiction. If the Public Utilities Board is to issue Orders of meaning to NYC and letters demanding me to do work by a certain deadline, it must follow proper legal procedures, such as obtaining a letter of rogatory.

May 6, 2010
Letter 2, Page 2 of 4

The Board is reminded to the understanding reached in the Fall 2008, whereby your legal counsel confirmed on behalf of the Board items (a) - (f) of my letter dated Sep 29, 2009. These stated that

f)

My firm, as per legal counsel, would like to restate to you our understanding that the Reports, no matter how they are obtained by the PUB (including but not limited to either directly from my firm, or from Manitoba Hydro, or from some other individual, employee or person), such foregoing materials still contain the same Trade Secret and Confidential information from NYC. Therefore our ability to redact or withdraw the Reports as contemplated in Section 13.(3).c and Section 13.(5) of the PUB Rules and paragraphs (b), (c) and (e) above, shall apply to all our Reports, no matter how, or from which entity or by whom they are transferred over to you. Notwithstanding the foregoing, if the PUB receives the Reports directly from Manitoba Hydro, NYC shall not be able to withdraw the Reports as contemplated by Section 13.(5). However all other provisions, including my firm's express ability to redact Trade Secret and Confidential information at our sole discretion (under 13.(3).c) shall apply, prior to placing in the public domain and/or submitting to Technical Advisors. All of the remaining terms in paragraphs (b), (c) and (e) shall also apply.

Your counsel provided me that written confirmation and Mr. Peters also confirmed to me by signed letter on Oct 13th 2009.

We confirm and acknowledge all other items of (a) and (f) contained in the signed Sep 29th 2009 letter, that are not otherwise referred to herein.

Specifically the Board endorsed that it would not set forward processes that would injure NYC software:-

Therefore our transmittal of reports to you, is with the express understanding that the PUB will not attempt to (or cause others to) a) recreate or redevelop software with similar attributes or to b) in any way cause the violation of the terms of our software agreements and the perpetual survival terms with Manitoba Hydro.

Your legal counsel made clear the Board would not endorse corrupt business practices by Hydro to violate the NDA requirements of our software agreements. Therefore it is duly noted, the Board's ongoing willful intent to harm the NYC by endorsing materials that were done in violation of your confirmations, again as a way to exploit a third party (NYC) to benefit the public.

To facilitate a more appropriate dialog, I have been advised to meet with the Board (and/or its counsel) as well as its proposed experts in NY. This was suggested in your Order 30/10. I have also received correspondence from a Mr. Gavin Woods requesting meetings with the PUB experts in New York. I have responded to him again notifying him that we are waiting for reply from the PUB and the release of legal fees to correspond with him. I have been explicitly advised that at this time, any such meeting must first be conducted with the PUB as well as the experts to gain a better understanding of what is expected.

Once a meeting has taken place in New York, we would be better able to discuss the appropriate next steps going forward. The funds suggested by the Board are unreasonable and not something that can be worked with given the amount of time and undertaking

May 6, 2010
Letter 2, Page 3 of 4

involved. Most NY lawyers are requesting \$15,000 to cover an initial review of the volumes (several thousands pages) of documents.

As suggested by your Board correspondence, an adequate legal retainer is required to retain necessary counsel to assist in the process. Therefore legal costs of retainer of \$10,000 are required as a minimum to proceed with these additional matters. NYC has been willing to meet in the middle and compromise on issues to the extent that they do not harm NYC.

The Board must consider, that no lawyer can possible read the background volume of materials in this amount of time.

I might like to remind the Board as follows

- No other parties are receiving a cap on legal fees
- The NYC has been sent thousands of pages of documents in excess of what it agreed to do, in terms of redacting (4) reports.
- No legitimate lawyer can even read and prepare for such a meeting without preparation to read background materials. Even at Board approved rates this \$5000 amount would reasonably be exceeded.
- NYC has contributed substantially at this point to the understanding of risks to the Board - and one issue being resolved has benefit to the public in excess tens of millions of dollars.
- NYC cannot be expected to "fund" the GRA process
- The Board in its letter dated Apr 14" also guaranteed legal funds to approve redactions in the process.

The Board can't also use legal leverage as a way to threaten to disenfranchise the NYC to exploit the use of confidential information. As always stated, any access to trade secret materials and the use of confidential information generated from NYC is governed by the laws of New York and appropriate state/federal laws. Any access to the files and software created to generate the results will need to be conducted in NYC (subject to strict NDA's and non-reverse engineering clauses in NY). We are open to a constructive and forward moving dialog about such matters to resolve the outstanding matters.

Therefore a meeting would enable us to talk through what reasonable guidelines are for this process. Until I receive confirmation of the foregoing and the other items, NYC will be delaying its redaction of reports, since it appears the Board is not responding to matters. The PUB is required not to broadcast or publicize any NYC materials, until such time as a resolution is reached on these matters. As you aware the KPMG and MH reports, also contain our confidential materials.

No budgets, hours or timeline have been agreed to for NYC to do this additional work which is far in excess of the limited (4) reports that were agreed to.

NYC restates, that it has no interest in excessive overwork and would prefer that these costs are avoided and all information is sealed and kept confidential. As a further suggestion, NYC would like to remind the Board, that both the NYC and MH appear willing to work with the Board in a "confidential" manner. Both parties have provided information in "confidence" to the Public Utilities Board. The broadcast of confidential and trade secret information is contrary to the interest of resolving the matters.

NYC Consultant

May 6, 2010
Letter 2, Page 4 of 4

Therefore it is solely at the direction of the Board to broadcast confidential information into the public domain that these costs and hours are incurred. Should the Board decide to pursue a "Confidential" hearing, NYC would not require the said amount of costs. The Board is again asked to consider a more constructive process of a confidential technical hearing to resolve the matters at hand.

An approval of cost award, this will facilitate my ability to secure the appropriate retainer. At that time we would be willing to meet with the Board (and/or its counsel) and experts together in New York. We would also then be able to provide the completed redactions to the Board.

All redactions must be approved by legal counsel prior to sending to the PUB. We do state, that none of our materials can be disseminated until such time as a response is received and resolution reached.

I am not able to proceed in equity without equal treatment to other participants and reasonable access to legal counsel.

Since the Board has not granted me intervener status there is no reason for me to volunteer free time and fund legal fees to help the Manitoba public. All US government agencies conduct "confidential" hearings and do not injure third parties to exploit them to benefit public citizens. Likewise, the Board must treat me like all other independent experts. As a matter of procedural fairness, the Board should disclose the estimated legal fees being granted to all other parties.

We have not received responses to our correspondences dated April 27th 2010 regarding legal fees, April 28th 2010 requesting a copy of Board Tariffs and letter dated April 30th 2010. Your courtesy and professionalism to respond to matters would be appreciated. Therefore, your prompt response is required.

We are waiting for response prior to any further continuation of the redactions since the volumes of materials sent here were far in excess of what was contemplated. Legal counsel must review all the materials prior to submitting to the Board, and our legal counsel is located in NY. Therefore the delay in progress, is due to the lack of response and lack of release of legal funds to speed up completion of the process.

We also have not received confirmation of the hours required for redactions of the illegally obtained KPMG report. We have not yet addressed the other two(2) large binders of hundreds of pages from MH in excess of our estimates, which also contain NYC confidential materials which cannot be disclosed.

Once again NYC invites the Board to come to NY (as indicated in Order 30/10), so that a more speedy and effective discussion and resolution can take place. Because of the failure to respond to multiple emails and letters, legal counsel are holding the redactions until responses and time is allocated for the additional work. As indicated in this letter a legal retainer is required for the GRA process, and to respond to emails from Gavin Woods to meet in NY.

No such funds have been authorized, hence the hold up in the process.

Sincerely,

"originally signed"

NYC Consultant.

(Fax to be sent as required)

Margaret Kennedy

From:
To: "Gerry Gaudreau" <gerry.gaudreau@gov.mb.ca>
Cc: "Bob Peters" <bobpeters@fillmoreiriley.com>; "Margaret Kennedy" <margk2@mts.net>
Sent: May-06-10 1:20 PM
Attach: PUB - May 6 2010 Letter NYC.pdf
Subject: May 6 2010 Letter to PUB

Please see attached.

This is in addition to our other letters and communications on April 30 and April 28 and April 27 which have not been responded to.

Your response and release of legal funds is appreciated asap.

Sincerely,

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Version: 8.5.437 / Virus Database: 271.1.1/2857 - Release Date: 05/06/10 06:26:00

Margaret Kennedy

From: Margaret Kennedy <margk2@mts.net>
To: Margaret Kennedy <margk2@mts.net>
Sent: May-10-10 12:29 PM
Subject: Re: Manitoba Hydro and PUB

Please have Mr. Peters contact me. We don't need to sign an NDA at this time since we will not be disclosing confidential information at this time. It has been requested that the PUB representative (and/or) its counsel attend the meeting, so we can address some basic issues with your processes.

We can meet as early as next week since no NDA's are required. Please understand my company is located in and does business under the laws of New York and applicable State/Federal laws.

Any access to our information (and computer software) will be governed exclusively by New York law and subject to NY jurisdiction as was indicated to Mr. Peters one year ago.

Any counsel involved will also be New York lawyers.

Thank:

On 5/10/10 10:43 AM, "Margaret Kennedy" <margk2@mts.net> wrote:

Good Morning S

I have spoken with Mr. Bob Peters, PUB Counsel, concerning the matter of legal costs which you raised. Mr. Peters tells me he will be responding to you concerning that matter. While you deal with Mr. Peters, I will prepare a draft non-disclosure agreement of yourself and Drs. Kubursi and Magee. Once prepared, I will forward to you for your consideration.

I have extended your regards, as set out in your e-mail, to my clients and they send back theirs.

Assuming that the legal costs issue can be sorted out, and assuming a non-disclosure agreement can be put in place soon, would you advise as to when thereafter Drs. Kubursi and Magee might attend to meet with you? Would it be possible for you to provide some tentative dates in that regard?

Yours truly,

Gevin Wood

Gevin Wood Law Office
3-430 River Avenue
Winnipeg, MB, R3L 0C8
Ph: (204) 947-1830
Fax: (204) 943-0461

Sincerely,

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Margaret Kennedy

From: "Margaret Kennedy" <mark2@mts.net>
To:
Sent: May-10-10 9:43 AM
Subject: Manitoba Hydro and PUB

Good Morning :

I have spoken with Mr. Bob Peters, PUB Counsel, concerning the matter of legal costs which you raised. Mr. Peters tells me he will be responding to you concerning that matter.

While you deal with Mr. Peters, I will prepare a draft non-disclosure agreement of yourself and Drs. Kubursi and Magee. Once prepared, I will forward to you for your consideration.

I have extended your regards, as set out in your e-mail, to my clients and they send back theirs.

Assuming that the legal costs issue can be sorted out, and assuming a non-disclosure agreement can be put in place soon, would you advise as to when thereafter Drs. Kubursi and Magee might attend to meet with you? Would it be possible for you to provide some tentative dates in that regard?

Yours truly,

Gavin Wood

Gavin Wood Law Office
3-430 River Avenue
Winnipeg, MB. R3L 0C6
Ph. (204) 947-1830
Fax: (204) 943-0461

Margaret Kennedy

From: [REDACTED]
To: "Bob Peters" <bobpeters@fillmoreiriley.com>
Cc: "Gerry Gaudreau" <gerry.gaudreau@gov.mb.ca>; "Margaret Kennedy" <margk2@mts.net>
Sent: May-25-10 10:11 AM
Attach: PUB - May 24 2010 FINAL .pdf
Subject: NYC Letter to PUB - Legal counsel

Bob,

See attached. Feel free to call to discuss.

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

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NYC Consultant

May 24, 2010
Letter 3, Page 1 of 4

NYC Consultant
Address on File
New York, NY

Bob Peters
Manitoba Public Utilities Board
Room 400, 330 Portage Avenue
Winnipeg, MB R3C 0C4
cc. Gerry Gaudreau
Cc: Us Counsel, Gavin Woods

Dated: May 24, 2010

Re: Legal Fees

Dear Mr. Peters,

We have received your letter dated May 11, 2010. As stated in email, NYC did not receive any letter from the Public Utilities Board dated April 23 2010, therefore has no knowledge of its contents or processes.

As per your letter on May 11, the PUB has acknowledged granting of legal fees up to a maximum of \$10,000 CDN to review the KPMG redactions. Please understand we assume that these hours cover our completion of sending both reports, but does not anticipate any dialog or communication with the PUB about such matters.

Please understand NYC has almost completely a first pass of all the reports and is at about the 80% mark. NYC has done a portion of work on the KPMG report, pending legal assistance. Legal counsel and NYC have arranged a minimum of four (4) meetings in the next week or two to review the materials. We have spent no less than 8 hours on the phone discussing matters, reading background materials without a retainer.

The purpose of my letter is to inform you that based on your correspondence, I have sought counsel. As of May 17, the first batch of reports is at their table for review to provide an estimate of what is required for them to proceed. As result of that communications, however, there are two issues.

- Firstly, US Counsel cannot agree to the reduced Government of Manitoba rates of \$212/HR. Most New York Counsel in particular bill as high as \$700-\$800/Hr with associates no less than \$365/HR. Even if I were to secure a discount it would be no less than \$425/HR. They are willing to accommodate fixed price work. However NYC is required to make up the balance.

This leaves NYC funding legal counsel at a rate of \$213/HR and working at a rate as you proposed of \$165/HR and therefore operating at a net operating loss. This again is problematic. I cannot be forced to work at a loss and US Counsel see no obligation to reduce rates. If Indemnification applies to US Counsel it must be at US Counsel rates. I believe I would be able to negotiate their fees to \$400/HR to cooperate with the PUB but not less.

- Second, US counsel do not operate as part of your GRA process. Neither NYC or its counsel are "Interveners" and as stated by the PUB have no interest in the public

NYC Consultant

May 24, 2010
Letter 3, Page 2 of 4

outcome of rate-payers. Therefore it is not reasonable to expect them or myself, to receive legal fees *months* after the fact. Services in NY are due upon rendered. Lawyers typically work upon a retainer based fee.

The comparison being made by the PUB to NY Counsel and your interveners counsel is not realistic. Firstly, counsel such as Byron Williams are counsel for Rate-payers of Manitoba and represent your Rate-Payer clients. In fact CAC/MSOS even provide their experts some upfront payment on their services and are regular Intervenors receiving payments.

NY Counsel have no clients in Manitoba and are providing services with bills due upon services being rendered. Likewise, NYC is a small business with bills to pay, and has no interest in funding the Public Utilities Board processes with its time. This could cause severe damage to its business scheduling being forced to work for free and turn down work, as well as not receive payments.

Your letter of May 11, 2010 expects NYC, as a sole company to "fund" the GRA process, up to amounts exceeding \$40,000 or more. This cannot be done. While NYC became a whistleblower to help the public and to step forward because of genuine concern of excessive risks being incorrectly reported, losses of \$1.1BN and other serious matters such as blackouts, it is now apparent the Government of Manitoba wants me to "lend" them over \$50,000 and fund their investigation on credit.

As you are aware, to date, NYC has also placed several hours (approximately 120 hours to date) to perform redactions. No monies have been received. The work is well underway. My understanding and arrangement of these services to the PUB was on a payment basis on a Net thirty (30) days time. NYC is sole consulting boutique and cannot "advance" monies on behalf of the Government of Manitoba to perform services for your own public rate-paying process. Again NYC is being financially harmed and taken advantage of.

While I understand your initial position, that the PUB may not "advance" monies for the process, likewise neither can the NYC. NYC was not granted Intervener status. The best compromise that NYC can commit to is that is paid on terms on a Net thirty (30) days basis, as a service provider as an "Independent Expert and Witness". This applies also to legal counsel for NYC. Payment is due upon services or redactions rendered.

NYC is sensitive to the timeliness to complete this, however is not willing to advance monies to legal counsel to proceed. Therefore because of a lack of proper funding by the PUB, the process is waiting confirmation as NY counsel need retainers. The PUB was made aware of this in March 2010. What is required is an understanding that once the redactions of the reports are completed, both NYC services, and its legal counsel services will be paid on a Net thirty (30) days basis. This will cover the amounts listed in your May 11 letter in items (A, B and C).

NYC does not feel it is fair or appropriate to advance monies on behalf of the GRA. I understand your need to have the work completed, but no contractors should be expected to work without payments net thirty (30) days upon their deliverable. This is standard fair business practice. I am a mother and have mouths to feed and funding the Public Utilities Board is not part of my job.

Assuming I receive an authorization, confirming that legal fees and NYC fees will be paid net thirty (30) days upon completion of each task, we can proceed promptly.

As for a meeting with your experts. NYC is prepared to meet with the experts, without the signing of an NDA at this time. We believe this initial meeting would be productive and

NYC Consultant

May 24, 2010
Letter 3, Page 3 of 4

constructive to facilitate initial discussion on the many materials that have been placed on the GRA record and that are inaccurate. Please let us know a date to meet with the experts in NY. Would May 31st work?

Finally, as discussed in my email, NYC proposed a generously discounted rate in March 2010, based on its expectation of Intervener status and legal fees. Since then, NYC has is now under contract with a comparably sized Utility and is being paid \$360/Hr. My hours are stretched thin. Therefore, I cannot possible extend any further rate discounts to the Public Utilities Board that would cause a loss to my business.

Once again, in an effort to compromise, the lowest possible rate that NYC could charge the PUB for any future services (other than the redactions of its own reports), which was all that was contemplated in Phase 1 of the Intervener Application is \$210/CDN HR. I believe this is consummate to what other experts and your Government of Manitoba rates are for outside experts. This would apply to any further redactions, including the KPMG Report or MH reports, and any meetings in NY. Otherwise NYC would be losing money on its billable time.

NYC is however willing to agree at this time, to the caps set forward in your letter on May 11, so this should work within your budgeting. NYC is also willing to work on a phase by phase process with a cap on estimated hours and time. NYC is also willing to work on a CDN/HR basis, but can only accept payment at the converted US Currency to be facilitated by Direct Deposit. NYC will provide the Direct Deposit coordinates.

I hope the above meets your approval. Legal counsel are to begin the work to review redactions on your authorization of a Net thirty (30) days billing for both myself and NY Counsel. Unfortunately, NYC finds it impracticable to "front" an excess of \$40,000 in hours, time and cashflow to the process and will not do so.

Please understand this letter is without any prejudice to any legal advice and decisions made to the very clear violations of confidentiality and contract made by Manitoba Hydro and our rights and remedies therein. It also is sent without any prejudice to the processes set forward by the PUB to accept "illegally" obtained materials that reverse engineered software and any violations of trade secrets enjoined by the Public Utilities Board.

I must also point out another misstatement in both your Order 30/10 and again repeated on May 11 2010. NYC has no interest in participating "to protect its reputation" and neither did it apply for Intervener status or blow the whistle to preserve its reputation. This is some nonsense started by Byron Williams who fails to understand that there are legitimate good and honest people who step forward in the interest of public, when it was clearly your Utility who has made misstatements impacting safety and reliability ("Blackouts") errors in the hundreds of millions of dollars in the causes of losses, and projected IFF's and risk numbers. Therefore, it is clear who's reputation is really being protected in trying to make sure no proper evidence and comments are placed on the record, as the PUB continues to state.

I do want to restate, that while I have agreed to "redact" reports, this participation in your process is "involuntary" and is being done only because you have essentially "forced" me to do this for fear/threat of broadcasting our materials - in order to benefit the public of Manitoba. NYC has repeatedly asked for a confidential and technically sealed hearing and with due respect sees it as the only meaningful way to resolve the issues at hand. My performing of redactions, in no way authorizes any other use of confidential materials and does not consent any use of the materials for public use. The request for budgets is in no

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May 24, 2010
Letter 3, Page 4 of 4

way my choice, and NYC would not be seeking any funds but for your requirements since it wishes to resolve the matters in a confidential manner.

The NDP Government and Public Utilities Board are not free to use any of the Trade Secret and Confidential materials (and my private property) and use for your own means, including the ongoing broadcast of such materials on the internet.

Even further, you have asked for "no comments" on the KPMG propaganda report, again as a way clearly to protect Hydro's reputation and the Government of Manitoba as opposed to conduct a neutral and balanced investigation where all parties have a fair and equal voice. My letter of April 8th and May 8th restate my position on the very obvious inequity in your process.

We must end this letter with a correction to your May 11, 2010 letter. This letter stated that MH "paid" for the work. Please understand that MH did not "pay" for a perpetual right to use the methods, broadcast the software and it does not own any rights to such material. Therefore under the TSA, section 2, the rights to use materials or cause any portion of them to be placed in the public domain do not exist. Also, no materials can be placed into the public domain that would allow a third party to reverse engineer our models. To that end, it should be clear that what MH paid for was a limited "end-user" non-public license. They did not pay for a "broadcast" license or a license that gives materials to third parties and competitors.

Being a whistleblower does not give the PUB the right to steal my methods, IP and Trade Secrets to benefit the public.

Lastly, the Board has indicated it does not care about the "accuracy" of the process. This continues to befuddle the need to even have a GRA risk review. The costs and liabilities must be noted to not just impact the public rate-payers but also US counterparties. The PUB would not be well advised to continue an "inaccurate" GRA with much at stake.

I have been advised again to remind you that any rights to my trade secret processes and methodologies and confidential materials are governed under New York law, and the applicable state/Federal statutes. I am not subject to your jurisdiction, and you have no rights to use or broadcast my trade secret and confidential materials without my consent or an appropriate letters of rogatory which has not been obtained and granting of rights from a United States Court and/or a NY Judge.

Please extend my well wishes to Mr. Gaudreau at the Public Utilities Board for a speedy recovery. Thank you in advance.

We look forward to meeting you or/your experts in NY. Please provide a date as quickly as possible as my hours and available time is spare. Would May 31st or June 4th work? As for legal counsel, they are in need of retainers and/or a commitment of net thirty(30) days payment to proceed. The same applies to work performed by NYC. I am not able to "personally" fund the process on behalf of the Manitoba Government.

Very sincerely,

Sincerely,
"originally signed"

NYC Consultant
(Fax to be sent as required)

Audrey Smith

From: "Audrey Smith" <amksmith@mta.net>
To: "
Sent: May-26-10 2:57 PM
Subject: PUB

Thank you for your e-mail of yesterday.

Dr. Kubursi and I have had the opportunity to review your letter to PUB dated May 24th and particularly note your suggestion that a meeting be scheduled with Drs. Kubursi and Magee in the very near future.

Dr. Kubursi would be most pleased for the opportunity to meet with you. It would be best for him to travel to New York on the weekend of June 5-6, or any other day in the week of June 7th. Would it be possible for you to meet for several hours on either the Saturday or the Sunday of that weekend or any day the following week? Should you feel that a longer period is needed that would be fine too.

At the moment, it is uncertain whether Dr. Magee would be able to attend if the meeting were to be held on the 5th or 6th of June, but will be present if it was held any day during the week of June 7th. Dr. Kubursi would like me to attend to facilitate the meeting. Would you mind if I attended with him (and possibly Dr. Magee) to assist at that first meeting?

Also, to date, Drs. Kubursi and Magee have not received your reports, or the KPMG report. To allow a productive meeting with you, Dr. Kubursi would like the opportunity to review your redacted reports before his attendance. Would you agree that it would be best for your reports to have been reviewed by him before his attendance? Would you be prepared to release your redacted reports in confidence to Drs. Kubursi and Magee?

Please contact me at your earliest convenience.

Regards,
Gavin Wood

Audrey Smith

From: "Audrey Smith" <amksmith@mts.net>
To:
Sent: May-31-10 8:45 AM
Subject: Fw: PUB

Good Morning :

Drs. Kubursi and Mcgee extend their regards!

I sent you the e-mail below on May 26, 2010. Would you kindly respond so that our travel arrangements might be made to attend upon you.

(Also I am enclosing a copy of a newspaper article of May 29th under separate e-mail. I thought you would find it of interest.)

Regards

Gavin

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg MB R3L 0C6
Phone: (204) 947-1830
Fax: (204) 943-0461

----- Original Message -----

From: Audrey Smith
To:
Sent: Wednesday, May 26, 2010 2:57 PM
Subject: PUB

Thank you for your e-mail of yesterday.

Dr. Kubursi and I have had the opportunity to review your letter to PUB dated May 24th and particularly note your suggestion that a meeting be scheduled with Drs. Kubursi and Magee in the very near future.

Dr. Kubursi would be most pleased for the opportunity to meet with you. It would be best for him to travel to New York on the weekend of June 5-6, or any other day in the week of June 7th. Would it be possible for you to meet for several hours on either the Saturday or the Sunday of that weekend or any day the following week? Should you feel that a longer period is needed that would be fine too.

At the moment, it is uncertain whether Dr. Magee would be able to attend if the meeting were to be held on the 5th or 6th of June, but will be present if it was held any day during the week of June 7th. Dr. Kubursi would like me to attend to facilitate the meeting. Would you mind if I attended with him (and possibly Dr. Magee) to assist at that first meeting?

Also, to date, Drs. Kubursi and Magee have not received your reports, or the KPMG report.

To follow a productive meeting with you, Dr. Kubursi would like the opportunity to review your redacted reports before his attendance.

Would you agree that it would be best for your reports to have been reviewed by him before his attendance? Would you be prepared to release your redacted reports in confidence to Drs. Kubursi and Magee?

Please contact me at your earliest convenience.

Regards,
Gavin Wood

Margaret Kennedy

From: Margaret Kennedy <margk2@mts.net>
To: Margaret Kennedy <margk2@mts.net>
Sent: June-01-10 10:57 AM
Subject: Re: PUB

Hello Mr. Wood, Yesterday was a holiday in the US for Memorial Day and most people were not in the office for the long weekend. I have received your emails.

Regarding the article attached - As you and Dr. Kurbusi and Dr. Magee may know, NYC recommended against the signing of this Xcal contract in its current form and was very specific about the problems not just to Manitoba but the US. In fact, of all the work, this contract was very specifically cautioned against. It should be of concern that Hydro is charging ahead executing deals without any regulatory oversight and clearly without any fair and complete risk review. Why the hurry? The deal doesn't start until 2015, and the PUB ordered in 30/10 that the deals are signed. It should be of note that NYC singled out this contract as highly problematic and not to be executed.

Regarding our communications - for clarification I am receiving emails from two different female accounts, both signing their names as "Gavin", so I am not sure whom I am communicating with. For communicating going forward, I suggest we use one email account and I would prefer to use the Margaret Kennedy account since emails to the other one were not previously received. I assume I am writing to the law firm of Gavin Woods. (even those emails are signed "Gavin" and coming from Margaret)

I am available to meet on Sunday 6th (in the evening) and/or Monday 7th. I agree that if you and Dr. Kurbusi and Dr. Magee want to attend that is fine - though my legal counsel have not received funding yet from the PUB which is holding things up. I am available to meet with you on my own.

If we need to make the date later in the week - I will need to check with my schedule.

On Sunday, I would have my little one with me as I only have child care during the week. However, if we meet for 3-4 hours in the evening she is usually pretty good and we could cover some initial ground.

Please note I still need to hear back from the PUB regarding my funding and legal funds. Until then, I can't share anything confidentially since in NY I do need to make sure my counsel are compensated on a net thirty(30) days basis.

Please let me know if the dates work -

Thank you

On 5/31/10 9:51 AM, "Margaret Kennedy" <margk2@mts.net> wrote:

Here is the newspaper article I mentioned in my previous e-mail

Gavin

Gavin Wood Law Office
3-430 River Avenue
Winnipeg, MB R3L 0C6
Ph (204) 947-1830
Fax: (204) 943-0481

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

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Version: 8.5.437 / Virus Database: 271.1.1/2910 - Release Date: 06/01/10 06:25:00

Margaret Kennedy

From: "Margaret Kennedy" <marak2@mts.net>
To:
Sent: June-01-10 1:49 PM
Subject: New York - PUB

Thank you for your e-mail and for kindly agreeing to meet with Drs. Kubursi, Magee and myself.

I notice in your e-mail of May 25, 2010 to Bob Peters with a c.c. to Gerry Gaudreau, that you requested an increase in your hourly rate for the meeting with ourselves. I have spoken to Mr. Peters and he has advised that this increase is agreeable to PUB.

Drs. Kubursi, Magee and I will arrive in New York on Sunday. We hope to stay at the Millenium Hotel near the United Nations complex. We could meet with you at that hotel, or wherever else would be convenient to you.

I will advise once we confirm our hotel arrangements. Would you advise as to where you would prefer we meet.

Thank you again.

Gavin

Gavin Wood Law Office
3-430 River Avenue
Winnipeg, MB. R3L 0C6
Ph. (204) 947-1830
Fax: (204) 943-0461

Margaret Kennedy

From: Margaret Kennedy <marg...@mts.net>
To: "Margaret Kennedy" <marg...@mts.net>
Sent: June-01-10 3:13 PM
Subject: Re: New York - PUB

Thank you. There is also a Millenium Hotel near the World Trade Center complex which is much more conveniently located.

You might try the following options which would place you very close to my office -

http://www1.hilton.com/en_US/hv/hotel/NYCMH-HH-Millennium-Hilton-New-York/Index.do

Also for close by hotels I recommend

Embassy Suites near the WTC

<http://www.hiltonfamilynewyork.com/embassy-suites-hotel-new-york-city.php>

For Budget/More Economy Hotels you can try

<http://www.cosmohotel.com/default.aspx?pg=home&rp=home>

And also

<http://www.hiddowntown.nyc.com/location.php>

If you do stay uptown, we may need to try and find a meeting location in the downtown area for Sunday - though a meeting room or a hotel/lounge might be fine. Let me know if you have a decision on your hotel.

On 6/1/10 2:49 PM, "Margaret Kennedy" <margk2@mts.net> wrote:

Thank you for your e-mail and for kindly agreeing to meet with Drs. Kubursi, Magee and myself.

I notice in your e-mail of May 25, 2010 to Bob Peters with a c.c. to Gerry Gaudreau, that you requested an increase in your hourly rate for the meeting with ourselves. I have spoken to Mr. Peters and he has advised that this increase is agreeable to PUB.

Drs. Kubursi, Magee and I will arrive in New York on Sunday. We hope to stay at the Millenium Hotel near the United Nations complex. We could meet with you at that hotel, or wherever else would be convenient to you.

I will advise once we confirm our hotel arrangements. Would you advise as to where you would prefer we meet.

Thank you again.

Gavin

Gavin Wood Law Office
3-430 River Avenue
Winnipeg, MB, R3L 0C8
Ph: (204) 947-1830
Fax: (204) 943-0481

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No virus found in this incoming message.
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Version: 8.5.437 / Virus Database: 271.1.1/2910 - Release Date: 06/01/10 06:25:00

 **Audrey Smith**

From: "Audrey Smith" <amksmith@mts.net>
To:
Sent: June-02-10 12:01 PM
Subject: PUB

Thank you for your e-mail of yesterday.

Dr Kubursi, Dr Magee and I have been able to book at the Millennium Hotel I mentioned to you.

Would it be alright if we met at your office late Sunday afternoon? We would take a taxi to your office or where ever else you wish.

Kindly advise.
Gavin

 Margaret Kennedy

From: "Margaret Kennedy" <margk2@mts.net>
To:
Sent: June-03-10 8:42 AM
Subject: Fw: New York - PUB

Good Morning.

Drs. Kabursi, Magee and I are scheduled to arrive at the Millenium Hotel near the UN complex by noon on Sunday.

Would you please advise if we might meet with you in the mid or late afternoon on Sunday. Please advise as to the time and location for that meeting.

We look forward to the opportunity of meeting with you.

Gavin

Gavin Wood Law Office
3-430 River Avenue
Winnipeg, MB. R3L 0C6
Ph. (204) 947-1830
Fax: (204) 943-0461

----- Original Message -----

From: Margaret Kennedy
To:
Sent: Tuesday, June 01, 2010 1:49 PM
Subject: New York - PUB

Thank you for your e-mail and for kindly agreeing to meet with Drs. Kubursi, Magee and myself.

I notice in your e-mail of May 25, 2010 to Bob Peters with a c.c. to Gerry Gaudreau, that you requested an increase in your hourly rate for the meeting with ourselves. I have spoken to Mr. Peters and he has advised that this increase is agreeable to PUB.

Drs. Kabursi, Magee and I will arrive in New York on Sunday. We hope to stay at the Millenium Hotel near the United Nations complex. We could meet with you at that hotel, or wherever else would be convenient to you.

I will advise once we confirm our hotel arrangements. Would you advise as to where you would prefer we meet.

Thank you again.

Gavin

Gavin Wood Law Office
3-430 River Avenue
Winnipeg, MB. R3L 0C6
Ph. (204) 947-1830
Fax: (204) 943-0461

Wood Law

From:
To: "Margaret Kennedy" <margk2@mts.net>
Sent: June-03-10 4:09 PM
Subject: Received your voicemail.
Gavin,

Am returning your message - you can return the call at 646.221.4363

I am aware of your schedule to arrive in New York on Sunday. I propose meeting at the Tribeca Grand Hotel (downtown) in the lounge/lobby at 5pm. Depending on the weather we could move on from there at around 6.30pm

I am available to meet all day Monday in your hotel in NY.

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

No virus found in this incoming message.
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Version: 8.5.437 / Virus Database: 271.1.1/2915 - Release Date: 06/03/10 06:25:00

 Margaret Kennedy

From: "
To: "Margaret Kennedy" <margk2@mts.net>
Sent: June-04-10 12:30 PM
Subject: Tribeca Grand / Meeting on Sunday 4.30pm-5pm

Hi, Here is the location for meeting on Sunday between 4.30pm and 5pm to start.

<http://www.tribecagrand.com/>

My contact info is below. If you need to reach me, please do not hesitate to call the cellphone.

Wish you a safe airline trip.

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

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Appendix B

M Margaret Kennedy

Page 1

From: "Margaret Kennedy" <mark2@mymts.net>
To:
Sent: October-03-10 2:39 PM
Attach:
Subject: Gavin Wood Law
Please see attached letter.

email to

October 5, 2010

You will recall that I am the lawyer representing Dr. Atif Kubursi and Dr. Lonnie Magee. I met you with Dr. Kubursi earlier this summer.

The Drs. and I have received a copy of PUB Order No. 95/10. In that Order reference is made to the Drs. addressing in their report any information they have received from meeting with you (at pp. 35-36). In that regard, Dr. Kubursi wishes to meet with you again. Specifically, we have now been provided with a copy of the "Public Document" that you released to the PUB and Dr. Kubursi wishes to review that document with you to fully understand its contents.

I should advise you that the Drs. are preparing their risk assessment report without review of the KPMG report which they have deliberately not received.

I have spoken with PUB Counsel advising that as independent experts my clients wish to meet with you again. Counsel advises that they believe a budget could be authorized in order that your costs would be covered in preparing and attending such a meeting.

The Drs. and I could attend over the coming weekend or the following weekend.

Would you please advise if such a meeting is possible.

Yours truly,

GAVIN WOOD LAW OFFICE

Per:

GAVIN M. WOOD

GMW/hm

Margaret Kennedy

From:
To: "Margaret Kennedy" <margk2@mymts.net>
Sent: October-05-10 4:56 PM
Subject: Re: Gavin Wood Law

I am not able to open or read this. This is not a pdf or word document.

On 10/5/10 3:39 PM, "Margaret Kennedy" <margk2@mymts.net> wrote:

Please see attached letter.

Sincerely,

=====
This message contains information which may be confidential and privileged.
Unless you are the addressee (or authorized to receive for the addressee),
you may not use, copy or disclose to anyone the message or any information
contained in the message. If you have received the message in error, please
advise the sender by reply and delete the message. Thank you very much.

Margaret Kennedy

From: "Margaret Kennedy" <margk2@mymts.net>
To:
Sent: October-06-10 8:13 AM
Subject: MB Hydro
email to :

October 5, 2010

You will recall that I am the lawyer representing Dr. Atif Kubursi and Dr. Lonnie Magee. I met you with Dr. Kubursi earlier this summer.

The Drs. and I have received a copy of PUB Order No. 95/10. In that Order reference is made to the Drs. addressing in their report any information they have received from meeting with you (at pp. 35-36). In that regard, Dr. Kubursi wishes to meet with you again. Specifically, we have now been provided with a copy of the "Public Document" that you released to the PUB and Dr. Kubursi wishes to review that document with you to fully understand its contents.

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I have spoken with PUB Counsel advising that as independent experts my clients wish to meet with you again. Counsel advises that they believe a budget could be authorized in order that your costs would be covered in preparing and attending such a meeting.

The Drs. and I could attend over the coming weekend or the following weekend.

Would you please advise if such a meeting is possible.

Yours truly,

GAVIN WOOD LAW OFFICE

Per:

GAVIN M. WOOD

GMW/hm

Margaret Kennedy

From: "Margaret Kennedy" <marok2@mymts.net>
To:
Sent: October-06-10 1:55 PM
Subject: Re: Gavin Wood Law
Hello,

Further to your e-mail of yesterday, I e-mailed my memo to you again this morning. Would you please confirm that you received it.

Thank you,

Gavin Wood

Gavin Wood Law Office
3-430 River Avenue
Winnipeg, MB. R3L 0C6
Ph. (204) 947-1830
Fax: (204) 943-0461

Margaret Kennedy

From: "Margaret Kennedy" <margk2@mymts.net>
To: "
Sent: October-14-10 2:54 PM
Subject: Fw: Gavin Wood Law

Good day,

Dr. Kurbusi and I were hoping to hear from you in the past few days.

I am attaching a copy of my e-mail of October 6, 2010. You will recall that Dr. Kubusi and I wish to meet with you again. We are hoping to arrange a time at your convenience to attend upon you.

The time schedule set by the PUB requires Dr. Kubusi and Dr. Magee to file their report in one months time. Time is therefore running out for Dr. Kubusi to meet with you. Accordingly, I would appreciate it if you might respond at your earliest convenience.

Regards

Gavin Wood

----- Original Message -----

From: Margaret Kennedy
To: "
Sent: Wednesday, October 06, 2010 1:55 PM
Subject: Re: Gavin Wood Law

Hello,

Further to your e-mail of yesterday, I e-mailed my memo to you again this morning. Would you please confirm that you received it.

Thank you,

Gavin Wood

Gavin Wood Law Office
3-430 River Avenue
Winnipeg, MB. R3L 0C6
Ph. (204) 947-1830
Fax: (204) 943-0461

Margaret Kennedy

From: Margaret Kennedy <margk2@mymts.net>
 To: "Margaret Kennedy" <margk2@mymts.net>
 Sent: October-14-10 3:10 PM
 Subject: Re: Gavin Wood Law
 Dear Mr. Woods,

We are disappointed to see that the PUB has released multiple materials which violate the express confidentiality, trade – secret and copyright provisions of NYC's materials. Particularly Appendix B – Appendix H are replete with unauthorized access to trade secret, confidential and copyright materials governed by strict licenses.

As you are aware a Court Order prohibition CI10-01-68399 was filed at QB again the PUB to stop this release. NYC unfortunately had to attend a funeral, and the PUB had made assurances to its Manitoba counsel, that it would not release the materials until the matter was heard in front of a QB judge schedule for Sep 30th.

Instead, knowing that both NYC and its counsel were at coincidental funerals (between Sep 24th – Sep 28th), they acted in bad faith, and went ahead and released the materials prior to the matter being heard by a judge on Sep 30th. This was with full fraudulent representation that if my client had filed an Writ of Prohibition, they would not go and do so until the judge had ruled.

As such, this matter is with the courts.

I am writing to formally require that you cease and desist any use of Appendix B – Appendix H which violate NYC's express confidential, trade secret, copyright and intellectual property and other moral rights. Should you or the experts continue to or start to utilize, refer to, comment on, or include any such materials that were released in injury to NYC, you may be enjoined and remain liable for the misuse of our property.

We therefore ask from you immediately the following

- An acknowledgement of Cease and Desist of the materials in Appendix B- H and confirmation of the same
- You please forward us an early draft of any reports by the experts, which will prove that you and they do not utilize any such unlawfully released materials.
- We lastly, ask for your Affidavit to acknowledge that you and the experts have not, and will not refer to Appendix B- Appendix H.

We would like to remind you that continued or any use of these materials, including yours and the experts receiving payment for use of unlawfully released materials may constitute serious violation of US Criminal and Civil laws, and this email is sent without prejudice and is not a waiver to all my rights under equity and law including damages.

We thank you for your timely response, including sworn Affidavit that the unredacted Appendices B – H will not be utilized whatsoever in your materials and/or oral testimony. It appears your email below constitutes some commentary of such, and we require a formal Affidavit to the same.

Should you require properly redacted reports, please contact this office.

Regards,

New York Consultant.

On 10/14/10 3:54 PM, "Margaret Kennedy" <margk2@mymts.net> wrote:

Good day,

Dr. Kubuski and I were hoping to hear from you in the past few days.

I am attaching a copy of my e-mail of October 6, 2010. You will recall that Dr. Kubuski and I wish to meet with you again. We are hoping to arrange a time at your convenience to attend upon you.

The time schedule set by the PUB requires Dr. Kubuski and Dr. Magee to file their report in one month's time. Time is therefore running out for Dr. Kubuski to meet with you. Accordingly, I would appreciate it if you might respond at your earliest convenience.

Regards

Gavin Wood

----- Original Message -----

From: Margaret Kennedy <margk2@mymts.net>

Sent: Wednesday, October 06, 2010 1:55 PM
 Subject: Re: Gavin Wood Law

Hello,

Further to your e-mail of yesterday, I e-mailed my memo to you again this morning. Would you please confirm that you received it.

Thank you,

Gavin Wood

Gavin Wood Law Office
 3-430 River Avenue
 Winnipeg, MB. R3L 0C8
 Ph. (204) 947-1830
 Fax: (204) 943-0461

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

Karen Fehr

From: "Karen Fehr" <kifehr3@mymts.net>
To:
Sent: October-20-10 11:16 AM
Subject: Re: PUB
Hello,

I have your email of October 14th. Dr. Kubursi has had the opportunity to review your comments and your requirements in order for you to meet with him.

The difficulty with those requirements is Drs. Kubursi and Magee are required as part of the PUB terms of reference to review the public documents filed by yourself and KPMG. They have not yet seen the KPMG report but are required to consider it before they complete their risk assessment report.

They have now received the Public Document which you filed with the PUB. They have reviewed the Public Document. In order to understand the Public Document fully, Dr. Kubursi wishes to have the opportunity to review it with you. He believes that if he could review it with you, he would better comprehend your positions and concerns. If you could arrange to meet with him, he would refrain from reviewing the KPMG report before that meeting. (I believe a budget could be arranged with the PUB to cover your costs of such a meeting.)

Would you please contact me further about the possibility of arranging such a meeting at your convenience.

Regards,

Gavin Wood

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg, MB R3L 0C6
Tel: (204) 947-1830
Fax: (204) 943-0461

Fehr

From: " "
To: "Karen Fehr" <kjfehr3@mymts.net>
Cc: "Margaret Kennedy" <margk2@mts.net>
Sent: October-20-10 11:32 AM
Attach: Notice of Appeal 10-18-2010C no sign.pdf
Subject: Re: PUB / Court of Appeals

As you aware this document was filed at the Court of Appeals on Oct 19th 2010. Please forward it to Dr. Kurbusi.

I will speak to counsel in NY about your comments and they will contact you if necessary.

Please make sure Dr. Kurbusi is aware of the Appeal and the very serious legal concerns.

I will contact you once I have further comment from NY Counsel, in the meantime, please make sure you read this document, and that Dr. Kurbusi can provide Affidavit for the same.

If you proceed to engage in violations of my property, you and the experts will also be enjoined as liable.

This matter is very serious, and I ask again for your Affidavit. I will speak to NY Counsel. Once Kurbusi has read this Appeal this will be more clear how serious it is.

We ask again you cease and desist from all materials (given an Appeal is to be heard) and ask for your Affidavit for the same

Please provide confirmation that you have not and will not use Appendix B - H. I trust the attached Appeal better explains the situation.

On 10/20/10 12:16 PM, "Karen Fehr" <kjfehr3@mymts.net> wrote:

Hello,

I have your email of October 14th. Dr. Kurbusi has had the opportunity to review your comments and your requirements in order for you to meet with him.

The difficulty with those requirements is Drs. Kurbusi and Meece are required as part of the PUB terms of reference to review the public documents filed by yourself and KPMG. They have not yet seen the KPMG report but are required to consider it before they complete their risk assessment report.

They have now received the Public Document which you filed with the PUB. They have reviewed the Public Document. In order to understand the Public Document fully, Dr. Kurbusi wishes to have the opportunity to review it with you. He believes that if he could review it with you, he would better comprehend your positions and concerns. If you could arrange to meet with him, he would refrain from reviewing the KPMG report before that meeting. (I believe a budget could be arranged with the PUB to cover your costs of such a meeting.)

Would you please contact me further about the possibility of arranging such a meeting at your convenience.

Regards,

Gavin Wood

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg, MB R3L 0C8
Tel: (204) 947-1830
Fax: (204) 943-0481

Sincerely,

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Karen Fehr

From: "Karen Fehr" <kjfehr3@mvmmts.net>
To:
Sent: October-22-10 3:11 PM
Subject: RE: PUB
Hello, Samantha,

Thank you for your e-mail of October 20th. Dr. Kubursi and I have had the opportunity to review the extensive Notice of Motion to the Manitoba Court of Appeal attached to that e-mail.

Dr. Kubursi and I have had the opportunity as well to consider your last e-mail. He asks me to reassure you that Dr. Magee and he are independent, objective consultants. Their only concern is the public interest.

Dr. Kubursi has now considered your Public Document in detail. The Public Document, he advises, has raised a number of most interesting issues for him. He wished to explore those issues further with you.

Dr. Kubursi is mindful that you alone can explain and elaborate the Public Document to him. That is, it is you alone who can inform Drs. Kubursi and Magee on the concerns you have raised, and the issues Dr. Kubursi has noted in your Public Document. He would be most appreciative for the opportunity to have you do so. He also believes it is in your interest and in the interest of the Manitoba public to have the Drs. fully appreciate those concerns and issues, so that they can properly evaluate them in their report.

Dr. Kubursi, again then, requests a further meeting with you at your convenience (and subject to a budget being secured from the PUB to compensate you for the preparation and attendance time involved).

Dr. Kubursi is not in a position to undertake to provide an affidavit or to agree to not read the KPMG report. Indeed, he is obliged to review not only your Public Document but also the KPMG report. But, he advises that the concerns and issues he wished to raise with you are arising from the Public Document you have disclosed, and not from the KPMG report, which he has not yet read.

If you could see your way clear to meeting with him, we could provide a list of these issues and concerns in advance of the meeting, and he would undertake to have not read the KPMG report before the meeting.

Dr. Kubursi and I, then, urge you to consider seriously his request for a meeting.

Please advise.

Yours respectfully,

Gavin Wood

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg, MB R3L 0C6
Tel: (204) 947-1830
Fax: (204) 943-0461

Gavin Wood

Karen Fehr

From: Karen Fehr
To: "Karen Fehr" <kjfehr3@mymts.net>
Sent: October-26-10 2:02 PM
Subject: Re: PUB

At the direction of counsel in NY, this matter is before the Court of Appeal and cannot be responded to at this time.

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Again, Order 95-10 was made in error of law, fact and jurisdiction and you are asked not to utilize any of such materials. Should you continue to do so, you will be enjoined and be liable for this wrongdoing.

The matter is before the Courts.

Sincerely

On 10/22/10 4:11 PM, "Karen Fehr" <kjfehr3@mymts.net> wrote:

Thank you for your e-mail of October 20th. Dr. Kurbusi and I have had the opportunity to review the extensive Notice of Motion to the Manitoba Court of Appeal attached to that e-mail.

Dr. Kurbusi and I have had the opportunity as well to consider your last e-mail. He asks me to reassure you that Dr. Magee and he are independent, objective consultants. Their only concern is the public interest.

Dr. Kurbusi has now considered your Public Document in detail. The Public Document, he advises, has raised a number of most interesting issues for him. He wished to explore those issues further with you.

Dr. Kurbusi is mindful that you alone can explain and elaborate the Public Document to him. That is, it is you alone who can inform Drs. Kurbusi and Magee on the concerns you have raised, and the issues Dr. Kurbusi has noted in your Public Document. He would be most appreciative for the opportunity to have you do so. He also believes it is in your interest and in the interest of the Manitoba public to have the Drs. fully appreciate those concerns and issues, so that they can properly evaluate them in their report.

Dr. Kurbusi, again then, requests a further meeting with you at your convenience (and subject to a budget being secured from the PUB to compensate you for the preparation and attendance time involved).

Dr. Kurbusi is not in a position to undertake to provide an affidavit or to agree to not read the KPMG report. Indeed, he is obliged to review not only your Public Document but also the KPMG report. But, he advises that the concerns and issues he wished to raise with you are arising from the Public Document you have disclosed, and not from the KPMG report, which he has not yet read.

If you could see your way clear to meeting with him, we could provide a list of these issues and concerns in advance of the meeting, and he would undertake to have not read the KPMG report before the meeting.

Dr. Kurbusi and I, then, urge you to consider seriously his request for a meeting.

Please advise.

Yours respectfully,

Gavin Wood

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg, MB R3L 0C6
Tel: (204) 947-1830
Fax: (204) 943-0461

Gavin Wood

Sincerely,

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Law

From: Margaret Kennedy <margk@wmts.net>
To: Margaret Kennedy <margk@wmts.net>
Sent: October-26-10 2:02 PM
Subject: FW: PUB

Sincerely,

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----- Forwarded Message -----
From: Karen Fahr <kjfahr3@mymts.net>
Date: Tue, 26 Oct 2010 15:02:40
To: Karen Fahr <kjfahr3@mymts.net>
Conversation: PUB
Subject: Re: PUB

At the direction of counsel in NY, this matter is before the Court of Appeal and cannot be responded to at this time.

I also note that Dr. Kurbusi had my Public Document since Jun 30th, and it was on the PUB website for the months of Jul, August and September and part of October and during all the three and half (3.5) months neither of you made any genuine effort whatsoever to contact me once with questions regarding the same. With respect, your sudden demand, after the egregious and unlawful overturning of redactions was not planned for. My NY Counsel are reviewing the materials and will contact you if appropriate.

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Please advise.

Yours respectfully,

Gavin Wood

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg, MB R3L 0C8
Tel: (204) 947-1630
Fax: (204) 943-0461

Gavin Wood

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Gavin Wood Law Office
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Tel: (204) 947-1830
Fax: (204) 943-0461

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Wood Law

From: [redacted]
 To: 'Margaret Kennedy' <margk2@mts.net>
 Sent: October-26-10 2:02 PM
 Subject: FW: PUB

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 To: Karen Fehr <kjfehr3@mymts.net>
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Gavin Wood

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 Unit 3 - 430 River Avenue
 Winnipeg, MB R3L 0C8
 Tel: (204) 947-1830
 Fax: (204) 943-0461

Gavin Wood

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advise the sender by reply and delete the message. Thank you very much.
----- End of Forwarded Message

Audrey Smith

From: "Audrey Smith" <asmith@mts.net>
To: < >
Sent: October-27-10 9:59 AM
Subject: PUB

Thank you for your e-mail.

By way of clarification, Drs. Kubursi and Magee did not wish to read the Public Document or the KPMG report while writing their own report. It was only after their own independent work was largely completed that they were in a position to review your Public Document. After reviewing it, Dr. Kubursi is making his request to meet with you to discuss and the issues raised from his review. (You'll recall that when Dr. Kubursi and I met with you earlier, the Public Document was not available.)

Bearing this explanation in mind, would you kindly consider again the request for a meeting.

Respectfully,
Gavin
/as

Gavin Wood Law Office
Unit 3 - 430 River Avenue
Winnipeg MB R3L 0C6
Phone: (204) 947-1830
Fax: (204) 943-0461

Audrey Smith

From: Audrey Smith <amsmith@mts.net>
Sent: October-27-10 11:07 AM
Subject: Re: PUB

As I stated this matter is before the Court of Appeals.

The PUB made an egregious mistake in the execution of its Order 95-10, and acted in bad faith and willful intent to harm me.

I suggest you contact the PUB and ask them to place the materials in Order 95-10 under a technical seal and rescind their Order.

Until then, the matter is before the Courts -

As stated multiple times, I am represented by counsel in NY, and at their direction, they will contact you if need be. In the meantime, I suggest you call the PUB and have them rescind the Order, and place the materials under a technical seal immediately.

In addition, I am reminding you to cease and desist any use of Appendix B - H which were released in violation of multiple laws and contracts. Should you continue to use them, you will be enjoined in any action.

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/s/

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Winnipeg MB R3L 0C8
Phone: (204) 947-1830
Fax: (204) 943-0481

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Audrey Smith

From: "Audrey Smith" <amksmith@mbs.net>
To: "Ali A. Kubursi" <kubursi@mcmaster.ca>
Cc: "L. Magee" <magee@mcmaster.ca>
Sent: October 28, 2010 10:17 AM
Subject: Fw: PUB

As discussed last night, I'm forwarding the e-mail from :

It looks as if we've exhausted ourselves with her. Agree?

Gravin
/as

----- Original Message -----

From:
To: Audrey Smith
Sent: Wednesday, October 27, 2010 11:07 AM
Subject: Re: PUB

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Gravin
/as

Gravin Wood Law Office
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Winnipeg MB R3L 0C8
Phone: (204) 947-1830
Fax: (204) 943-0481

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Karen Fehr

From: "
To: "Irene Hamilton" <ihamilton@gombudsman.mb.ca>
Cc: <minjus@leg.gov.mb.ca>; "Bob Peters" <bobpeters@fillmoreRiley.com>; "Anita Southhall" <alsouthall@FillmoreRiley.com>; "Ramage, Patti" <pjramage@hydro.mb.ca>
Sent: December-01-10 12:07 PM
Attach: Letter to Court 11_30_2010.pdf
Subject: Letter to Court Nov 30 2010
Sent at the direction of the Court to copy everyone.

Sincerely,

This message contains information which may be confidential and privileged. Unless you are the addressee (or authorized to receive for the addressee), you may not use, copy or disclose to anyone the message or any information contained in the message. If you have received the message in error, please advise the sender by reply and delete the message. Thank you very much.

FILE NO: A110-30-07442

Letter from New York Consultant,
The AStar Group, Inc

VIA FACSIMILE: 1-204-948-2072

Attn: Registrar of the Court
Court of Appeal
Room 100E
408 York Avenue
Winnipeg, MB. R3C 0P9

Nov 30 2010

Dear Ma'am,

I have received your letter of November 30th 2010 and must correct for the record that your statements were not factually accurate. Firstly I did promptly provide copies of the letter to the PUB on Nov 24th 2010 as was clearly indicated in my letter.

Secondly your correspondence dated Nov 16th 2010 only asked me to provide only a copy of the "Notice of Appeal" to the many parties listed in the Grounds for Appeal. There was no direction for me to provide copies of all future letters and correspondence to every party, namely Interveners, MRO, NERC, KPMG, ICF, The Ombudsman, Interveners, The Attorney General, The Auditor General. Likewise I note that correspondence from Manitoba Hydro and the PUB is not being sent to all these parties.

Your letter states you are responding to me "despite" this fact when a) no other party is doing so, and b) the requirement to send future letters to these parties was clearly omitted from your prior correspondence. I am surprised the Court would even send out such a letter without verifying the facts and that the PUB had received a copy.

I am correctly pointing out that there was no direction from the Court to send future letters of all correspondence to all these "potential parties" and it seems unusual for only me, to have to send copies of only my correspondence to all the foregoing when neither the PUB nor Manitoba Hydro are doing so. Your letter suggests that you wish me to send only my letter of Nov 24th 2010 to all these parties (even though the PUB nor MH have not previously sent all their letters to these parties).

In addition your letter of Nov 16th 2010 asked me to serve informally various parties the Notice for Leave for Appeal only, which was completed last week. Likewise, there was no request to provide any proof of service, but just an informal service.

I have happily obliged by the Court requests in a prompt manner, but do want to point out that your letter made no request for proof of service in your original letter of November 16th 2010, which was clearly inconsistent with your request on Nov 3rd 2010 whereby

you did ask for proof of service then. I would have gladly provided this to you expeditiously but note again, a clear difference in your letter of Nov 3rd which asked for Proof of Service only for Manitoba Hydro. Therefore you did not request or require proof of service for the other parties served informally. This new request you made to me today, is for a proof of service to all approximately 15 parties which was not previously mentioned in your prior correspondence.

I am now aware that you request that I send all parties copies of my future correspondence to other parties, even though in reciprocity, facts show that certain letters (such as those from Ombudsman's counsel) are not being copied to me at all. This again is clearly inequitable.

I certainly did not wish to send people copies of Court correspondence when the Court had not previously directed me to do so. To that end, if you now require this I will provide the foregoing in email format and fax and confirmations of all. Likewise, in light of new direction from the Registrar, I will provide copies only of my Nov 24th correspondence to the Interveners, MRO, NERC, KPMG, ICF, The Ombudsman, the Attorney General and The Auditor General.

I would like to clarify that your directions for me to send copies of only my letters to all these parties as you have not directed the Public Utilities Board nor Manitoba Hydro to do the same. I would appreciate also a correction to your last letter, as I clearly sent a copy of my Nov 24th letter to both the PUB and MHEB.

Likewise, respectfully I note a comment in your letter about requests being made as motions to the Court. I would like to point out that Ms. Ramage also made such a motion in a letter to the Court dated Nov 10th 2010 which was unchallenged by the Registrar and communications from your office. Based on that procedurally not being challenged by the Court, I likewise communicated in the same manner.

I have attached the proof of letter in this email, showing that my Nov 24th 2010 letter was indeed sent to the PUB and MHEB. Specifically I note that all parties have been notified.

In general, I note the communications from the Court should be equal to all potential parties (not just certain GRA-interveners who are not even mentioned in my Appeal document), and also should be equal to all potential parties in the proceeding, as opposed to just singling out to copy certain persons, favored by Manitoba Hydro and the PUB.

For example, your letter is inconsistent in that clearly both Ms. Ramage and Ms. Southall neglected to copy the Ombudsman on their correspondence, even though they are an interested party in this Appeal. However your communication does not take this into account and focuses only on Hydro's GRA-interveners.

I remind this Court again that almost all the GRA-interveners were not even mentioned in the Grounds for Motion for Leave for Appeal, however all the other parties such as

MRO, NERC, KPMG, ICF, Ombudsman, Auditor General, Government of Manitoba were.

I therefore note, that the PUB and MHEB are not copying any of these people on any of their correspondence, and again the Court did not request this fairly from anyone else.

In addition, my Motion for Leave for Appeal does in fact seek an immediate sealing order to be placed around the materials (see Page 3, Bullet 3) and on this note your communication is also incorrect.

Finally, I am not seeking "legal" advice from the Court, but simply the process to expedite this process. For instance, I asked for the process to include further grounds in the Application. As more time passes, more damages are being done and it appears the Court is not recognizing the genuine damages being caused by the delay and still no date has been set for case management.

I also point out your letter is not accurate in that, the Motion for Leave does seek immediate rectification and therefore does not require a new motion.

I also assert that it is in the PUB and MHEB's interest to stall this matter so that the GRA can be completed without any fair judicial review and involvement before Jan 5 2010. When I filed the Motion for Leave for Appeal I had anticipated the matter being heard on Nov 18th. Instead, more damages are being incurred because of these correspondences that are being done. There is a clear prejudice to the PUB and MHEB to stall the matter and take up time copying so many parties.

It is the Public Utilities Board who has erred in law, fact and jurisdiction and I view the involvement of everyone else as a distraction and a deliberate tactic by the PUB and MHEB to slow this matter down so that there is no point in proceeding.

As a result of the delays, I had pointed out in my letter, the fact that not only my grounds are increasing but there may be no point in pursuing my legitimate fair right to Appeal an order because of the delays being caused.

As you aware, and has been made aware in every one of these communications, there is a time sensitivity around this Appeal. As we are approaching December, I believe there will no point pursuing this Motion for Leave for Appeal because of the administrations being a consuming time in the process. This is itself would defeat the purpose of granting leave.

Your letter of Nov 16th 2010 stated that a stay could be discussed in Case Management, and now your letter is contradictory of Nov 30th 2010 says that a stay requires a new motion. However this is inaccurate as my original Motion for Leave seeks to stay the order effective immediately. Likewise your Nov 16th 2010 letter does not point out any requirement to send copies of ALL future correspondence to all these 15 potential parties.

It simply asked that I informally send them a Notice of Appeal, and resulted in an unfair accusation in your letter. Clearly the mistake was at your end.

Despite the inaccuracies in your letter, I am sending 15 copies of all letters to everyone.

I also note that your letter itself also does not copy any of the other potential parties, such as the Ombudsman. I also note Manitoba Hydro is excluding the Ombudsman in their communications and you incorrectly pointed out on the phone that they had CC'd all parties. This is not factually correct.

I also would like a correction in that I did clearly copy the PUB on my Nov 24th letter and this was the only direction previously received by the Court.

If you have any further questions, please do not hesitate to contact me.

Yours truly,

Signed: 

New York Consultant

154 Reade Street, 2nd Floor
New York, NY. 10013
United States of America
Phone: 212-431-5098
Fax: 209-755-583

CC: Auditor General, Attorney General, Ombudsman, ICF, KPMG, MRO, NERC, GRA-Interveners (X7),