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Our File No.: 05497-0216-0000

May 2, 2013

BY EMAIL

British Columbia Utilities Commission
6th Floor, 900 Howe Street
Vancouver, BC V6Z 2N3

**Attention: Erica M. Hamilton,
Commission Secretary**

Dear Sirs/Mesdames:

**Re: FortisBC Inc. (FortisBC) – Application for a Certificate of Public
Convenience and Necessity for the Advanced Metering Infrastructure
Project (AMI Project)**

Enclosed please find the Reply Submissions of FortisBC Inc. dated May 2, 2013 and the Authorities cited in the Reply Submissions (other than those already contained in our first Book of Authorities). Twenty hard copies will follow by courier.

Yours truly,

FARRIS, VAUGHAN, WILLS & MURPHY LLP

Per:



Ludmila B. Herbst

LBH/lb

Enclosure

c.c.: Registered Interveners
Boughton Law Corporation – Attention: Gordon Fulton, Q.C.
FortisBC Inc. – Attention: Dennis Swanson

BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

FortisBC Inc.
Application for a Certificate of Public Convenience and Necessity
for the Advanced Metering Infrastructure Project

**REPLY SUBMISSIONS OF FORTISBC INC.
MAY 2, 2013**

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Ludmila B. Herbst**

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PART I - OVERVIEW

1. FortisBC Inc. (**FortisBC**, **FBC** or the **Company**) sets out below its reply to the Intervener submissions delivered on or before April 25, 2013. Capitalized terms are used herein as defined in FortisBC's original submission dated March 28, 2013 (the **Main Submission**).

2. FortisBC also continues to rely in this regard both on its Main Submission and on its evidence as a whole. Points that are not specifically responded to should not be taken to be admitted.

PART II - SCOPE OF EVIDENTIARY RECORD

A. Overview

3. Various Interveners have introduced as part of their final submissions information which was not part of the evidentiary record. Those portions of their submissions should be disregarded. As the Commission has previously ruled, "Final Submissions may not contain any new information and may only refer to evidence on the record,"¹ and "any new information introduced in Final Submissions that is not on the evidentiary record" should be given "no weight".² Likewise, in the Procedural Information letter sent by the Commission to all Interveners on January 10, 2013, final arguments were described as being "based on the evidence presented" and it was again emphasized that "**New evidence cannot be introduced in Final Argument**" (emphasis in original).³

4. While this list is likely not exhaustive, portions of the Intervener submissions which go beyond the evidentiary record are as follows.

¹ Cal-Gas Inc. Application for Approval of an Increase to Propane Rates at the Kicking Horse Mountain Resort, Reasons for Decision at p. 2.

² Cal-Gas Inc. Application for Approval of an Increase to Propane Rates at the Kicking Horse Mountain Resort, Reasons for Decision at p. 3.

³ Exhibit A-25 – Procedural Information at p. 4.

B. Particular Submissions

(1) CSTS

5. CSTS includes as an appendix to its submissions a document entitled “Opt Out Programs in the USA”. While FortisBC has no objection to new legislation or case law being referenced, many of the cited sources are not of this nature, are not in the record and have not been tested. According to CSTS’s footnotes the information pertaining to Florida, Louisiana, the first two bullet points regarding Maine, Maryland, Michigan (except for the last bullet point), Nevada, Oregon and at least the second bullet point pertaining to Texas is derived from materials (other than legal authorities) which are not in the evidentiary record, namely a “Minute Packet” (footnote 2), news items such as an article from the *Las Vegas Herald Review* (footnotes 5, 6 and 11), announcements (footnote 8), and reports or letters (footnotes 9 and 15). Further, there is no source (whether from the existing evidentiary record or outside it) cited for the statements made regarding Connecticut. This new information should not be relied upon or given any weight.

6. The dangers of allowing and relying upon such information become clear when the sources are carefully reviewed. Few of the sources in CSTS’s appendix, whether or not properly referenced in final submissions, support a conclusion that the jurisdiction in question provides a smart meter opt-out program, despite the document title “Opt Out Programs in the USA” and CSTS’s suggestion that the appendix enumerates utilities in several jurisdictions which have allowed for opt-outs from their AMI programs (page 71). The problems with the evidence referred to by CSTS include the following:

- (a) The Florida material (none of which is in the record) does not indicate that there is an opt-out program in Florida. It consists of minutes of a meeting of Brevard County Commissioners who pass a resolution requesting public hearings on smart meter benefits and hazards. The title of the resolution includes the words “opt out” but the wording of the resolution itself is not set out, so it is unclear what the Commissioners passed.

Further, whatever they did pass would not have applied to the whole state of Florida in any event.

- (b) The Georgia information (which FortisBC does not object to being referenced, as it is a Bill of the Georgia Senate) is to a Bill which passed the Senate but stalled in the State House. The Bill would authorize Georgia's Commission to allow opt-out, but not require it to do so. It appears that no action has been taken on the Bill since March 13, 2012 and it has not passed into law.
- (c) The Hawaii information (which FortisBC does not object to being referenced as it appears to be a court-filed and ordered settlement agreement between a utility and an individual) makes clear that there is no opt-out program in Hawaii, since the agreement expressly allows the individual to challenge such a program.
- (d) The Louisiana evidence refers to a KATC news story (which is not in the evidence) regarding the City-Parish council's vote on opt-out. It does not suggest that there is a statewide opt-out program.
- (e) The Michigan evidence does not support the existence of an opt-out program in that state. There is a document in the nature of submissions (which are not in the evidence) to Michigan's Commission from the state's Attorney General, who takes a position on opt-out. There is also a Commission Order (which, given it is an order, FortisBC does not object to being referenced) in which the Commission directs utilities to submit information as to the nature of their plans to implement smart meters, potential benefits and harms of smart meters, and whether they intend to allow customers to opt out.
- (f) The Pennsylvania evidence does not support that there is an opt-out program in that state. It is apparently a Bill proposed before the Pennsylvania General Assembly on February 8, 2012 (again, given its

nature, FortisBC does not object to it being referenced) but it appears that no action has been taken on it since February 8, 2012 and it has not passed into law.

- (g) The Texas material indicates that there is no opt-out program in that state. It includes reference to a Bill which was before the Texas Legislature in 2005 (which FortisBC has no objection to CSTS referencing). It appears to have passed into law. However, the Bill does not refer to an opt-out program. There is also a 2012 letter from a State Representative who authored the Bill, who indicates that he supports opt-out. The letter is not in the evidence and FortisBC does object to it being referenced.

7. CSTS also refers to the content of the IARC monograph that it seeks to introduce into evidence but that is not now part of the evidentiary record (pages 5-6, 72). Not only does it do so when it should not, given that submissions are still to be exchanged on whether or not the monograph should be admitted, but CSTS has mischaracterized the monograph's content.

8. Most broadly, in this regard, and contrary to CSTS's contention at page 72, it is clear that the monograph is not a "game changer", but simply an expanded version of the summary already referred to in the evidence and taken into account by experts and Canadian health agencies alike.⁴ In this regard, the Exponent Report⁵ already referred to the establishment and conclusions of the IARC Working Group, and cited a summary of the IARC Working Group conclusions⁶ which had been published in *Lancet Oncology*.⁷ While we do not otherwise quote from it, we note that the monograph itself confirms that "[a] summary of the findings in the present volume has appeared in *The*

⁴ Main Submission at paras. 441-442.

⁵ Exhibit B-1 – FBC's Application, Appendix C-5.

⁶ T3, p. 536, ll. 7-10; T4, p. 705, ll. 12-14; T7, p. 1298, ll. 6-8.

⁷ Exhibit B-1 – FBC's Application, Appendix C-5 at pp. 14, 31, citing Baan R., Grosse Y., Lauby-Secretan B., El Ghiassassi F., Bouvard V., Benbrahim-Talla L., Guha N., Islami F., Galichert L., Straif K., WHO International Agency for Research on Cancer Working Group. Carcinogenicity of radiofrequency electromagnetic fields. *Lancet Oncol* 12:624-626, 2011.

Lancet Oncology (Baan *et al.*, 2011)".⁸ The IARC conclusions were also referred to widely in the Intervener evidence that was filed in January 2013. Indeed, Dr. Maisch specifically provided a link to the *Lancet Oncology* summary on pages 14 and 68 of his report,⁹ and included extracts from that summary as Appendix V of his report.¹⁰ During the hearing in March 2013, the IARC conclusions were again widely canvassed.

(2) Mr. Flynn

9. Mr. Flynn introduces in his submissions various points which are not found in his powerpoint presentation and which do not otherwise appear to be in the evidentiary record. These points include:

- (a) allegations about who authored Safety Code 6. While Mr. Flynn put such assertions to Dr. Bailey, Dr. Bailey could not confirm Dr. Repacholi's alleged role;¹¹
- (b) allegations that "EMR 'hot spots' that will occur in various locations in virtually every dwelling due to 'Reflections' caused by EMR reflecting off stainless steel appliances, tiled floors, granite countertops, etc. Hot spots can add significantly to the overall ambient level of EMR within a home, and therefore is an additional danger to unsuspecting occupants who would be chronically exposed to them <http://sagereports.com/smart-meter-rf/>";
- (c) references to websites such as <http://wiredchild.org/component/content/article/46-hidden/99-icnirp.html>,
<http://www.youtube.com/watch?v=5a850d2q3QY&list=PL0E7F029D22993377&index=1>;

⁸ "General Remarks" at p. 33.

⁹ Exhibit C9-8, Tab 4C – Maisch Report.

¹⁰ Exhibit C9-8, Tab 4C – Maisch Report, Appendix V.

¹¹ T7, p. 1245, ll. 19-21, p. 1246, ll. 1-3.

- (d) an allegation that the members of “the **International Committee on Electromagnetic Safety (ICES)**...are: the U.S. Air Force, the U.S. Army, Alcatel-Lucent, Bell, Motorola, Nokia and Siemens! http://www.youtube.com/watch?v=AHhfjQ1_JVw&lr=1”. Again, we have been unable to locate even a reference to the website in the record; and
- (e) an allegation that “the members [of the Committee that sets IEEE’s Exposure Limits] ...are: the *U.S. Air Force, U.S. Army, Motorola, Nokia, Siemens, Alcatel-Lucent and Bell...*”

(3) Nelson Creston Green Party Constituency Association

10. The Nelson Creston Green Party Constituency Association (**NCGPCA**) has reached extensively beyond the evidentiary record in its “Argument Number Two”, which commences on page 3 of its submissions. In this portion of its submissions, NCGPCA cites new information including a Mauna Loa carbon dioxide record, Bloomberg New Energy Finance, the mission statement of the National Association of Energy Service Companies, and various information regarding “Energy Saving Trust models”.

(4) Mr. Miles

11. Mr. Miles refers to a clinical trial process pertaining to new drugs at page 3 of his submissions. The reference leads to a report prepared by the Auditor General. That report is not in the evidentiary record.

PART III - PARTICULAR ISSUES

12. Particular issues raised by Interveners in their various submissions are addressed below.

A. Project Description

(1) Required Features

13. Mr. Miles criticizes as a “deceptive rationale” on page 2 of his submissions FortisBC’s reference to a need for hourly reads, with specific reference to the *Clean*

Energy Act. BCPSO also advocates against hourly consumption information being obtained (pages 21-22). While it is true that the *Clean Energy Act* does not require RF technologies, which is why the FortisBC RFP specifications also did not require bidders to employ such technology, the definition of “smart meter” in s. 2(d) of the Smart Meters and Smart Grid Regulation specifically prescribes that meters must be capable of recording measurements of electricity, and recording the date and time of the recording, at least as frequently as in 60-minute intervals. In determining FortisBC’s 2007 AMI application, the Commission encouraged FortisBC to consider the Regulation once enacted. Further, the definition of “smart meter” in the Regulation is applicable to s. 17(6) of the *Clean Energy Act*, which requires the Commission to consider the government’s goal of having smart meters, other advanced meters and a smart grid in use with respect to customers of public utilities other than BC Hydro on applications such as this one. See also paragraph 67 below as to the purpose of hourly consumption data.

(2) Other AMI Installations

14. On page 4 of his submissions, Mr. Flynn refers to information regarding Pacific Gas & Electric (**PG&E**) and Silver Springs Networks (**Silver Springs**). These installations did not involve the Itron Openway meters that FortisBC proposes to install as part of the AMI Project, and the information regarding the PG&E and Silver Springs installations does not apply to the AMI meters.¹² In fact, the evidence demonstrates that the number of transmissions, for example, is very different.¹³

(3) Zigbee Devices and Control over Customer Appliances

15. As was described in the Main Submission, the proposed AMI meters incorporate two specific radios: the first is used to communicate information back to FortisBC, while the second may be used by customers to allow the AMI meter to communicate with

¹² T3, p. 335, ll. 8-17 (regarding Pacific Gas); T7, p. 1312, ll. 10-23 – Dr. Shkolnikov and Mr. Warren (regarding Pacific Gas); T7, p. 1318, ll. 10-12, p. 1319, ll. 5-6 – Mr. Warren (regarding Pacific Gas); T3, p. 337, l. 14 (regarding Silver Springs Network).

compatible devices located within the customer's home as part of a HAN.¹⁴ On page 5 of his submissions, Mr. Flynn indicates that the transmitters that he associates with HAN cannot be "shut off by the public". This is incorrect, as the Zigbee device that enables the HAN is fully optional, off by default, and only turned on at customer request.¹⁵ This was noted, for example, by Dr. Shkolnikov in responding to Mr. Flynn's questions on exposure:¹⁶

...if you are concerned about the RF exposure from ZigBee, you never have to use it and that's why we never -- you know, we have included it but the ZigBee is optional. So if you're concerned about it you would turn it off. In terms of nearby houses, I would expect exposure is very tiny because a drop from 20 centimetres to let's say -- you know, to let's say 20 metres would be a very dramatic drop in the power density.

16. Further, in his submissions Mr. Tatangelo expresses concern that the Zigbee device may somehow allow FortisBC to control customer appliances, asking "Do you want Fortis turning off your air conditioner, water heater or thermostat?" (at page 2). While FortisBC expects that the AMI system will enable it to send some forms of control messages to customers, such as on/off commands or thermostat set-points, any devices equipped to receive these commands will be fully optional, enabling customers to determine if they would like to receive such commands. Presently, FortisBC has no intention of sending control signals to customer devices, for any reason. If in the future customer demand warrants such a service, FortisBC would only send such signals at the explicit request of a customer or as part of an approved rate structure.¹⁷ The visibility, automation and control of any appliances will reside solely in the hands of the customer, and not with the utility.¹⁸ Mr. Warren testified as follows in this regard:¹⁹

MR. WARREN: A: So, there is a couple of questions in there. One is whether it's technically possible to do that. And the answer to your question is no. And there is a couple of reasons for that. Technically, I

¹³ Exhibit B-11 – FBC's Response to CSTS IR1 57.2, 57.5; Exhibit B-1 – FBC's Application at p. 135; T7, p. 1318, ll. 8-9

¹⁴ Main Submission at p. 119.

¹⁵ Exhibit B-11 – FBC's Response to CSTS IR1 54.3.

¹⁶ T7, p. 1325, ll. 4-12.

¹⁷ Exhibit B-11 – FBC's Response to BCSEA IR1 15.6.8.

¹⁸ Exhibit B-1 – FBC's Application at p. 45.

¹⁹ T7, p. 1337, l. 11 – p. 1338, l. 5, p. 1339, ll. 25-26, p. 1340, ll. 14-16, 22-25 – Mr. Warren.

think the smart energy profile allows for the kind of control that you're discussing. The ZigBee smart energy profile. However, that ability of the utility to control that would be subject to two things at least. One would be whether the customer allows it or not, and they can certainly disable the remote control if they have chosen to put a ZigBee device in their house.

Furthermore, FortisBC would not do that without customers' permission. And thirdly, I think that the B.C. Utilities Commission would also not allow us to do that without the customers' permission. So for many reasons I say no, that we will not be controlling appliances or any other device without customer permission.

(4) HAN Configuration

17. BCSEA proposes that the FortisBC HAN system be configured such that the meter can communicate only with in-home display or gateway devices. It offers two reasons for this proposed remedy: (a) the design creates potential security problems for customers who may wish to use the interface; and (b) the FortisBC design would unnecessarily limit the potential for customer choice between different types and brands of in-home devices (at p. 20).

18. FortisBC has not yet decided on the full range of devices that it will allow to be connected to the FortisBC meter, but has already clearly stated that it intends to allow in-home display devices to connect, and also proposes to offer PowerSense DSM incentives to encourage customers to use these devices.

19. As discussed extensively through the evidentiary record, FortisBC also intends to allow customers to connect gateway devices to the HAN since that may be desirable for the customer, for example in situations where the customer wishes to utilize a non-ZigBee HAN in their home.²⁰

20. However, restricting customer choice to only a subset of potential ZigBee HAN devices, specifically in-home display and gateway devices, is not in the best interests of customers. Setting up a ZigBee gateway devices and configuring a separate customer-side HAN network is not an exercise which all customers may be willing or able to undertake. It is entirely conceivable that there will be customer demand for devices

other than in-home displays and gateway devices, and that customers may want to easily connect those devices to a FortisBC meter. Therefore, FortisBC believes that it is the BCSEA proposal, not the FortisBC proposal that unnecessarily limits customer choice.

21. Further, BCSEA should not be deciding on behalf of customers whether direct connection of ZigBee HAN devices to the FortisBC meter, rather than through a customer gateway, is a security issue. FortisBC notes that the BCSEA are inconsistently unconcerned regarding the direct connection of in-home display devices.

(5) SEP 2.0

22. BCSEA also suggests that future Commission approval should be required before FortisBC is able to implement SEP 2.0 (at p. 24). With respect to this potential upgrade, FortisBC plans to consider all customer benefits and issues and to determine whether to implement SEP 2.0 prior to allowing HAN devices to connect to AMI meters. This will ensure that customers will not have any stranded assets if SEP 2.0 is implemented.²¹ For this reason, FortisBC's position remains that Commission approval is not necessary for the implementation of SEP 2.0.

(6) Pictured Meters

23. At page 2 of his submissions, Mr. Tatangelo questions the accuracy of a report prepared by Planetworks Consulting for BC Hydro in July 2012 that investigated the strength of RF emissions from a bank of 40 smart meters (the **Planetworks Report**).²² Mr. Tatangelo's concerns arise from a photograph appended to the Planetworks Report, depicting certain meters utilized in the testing.²³ Mr. Tatangelo submits that he was only able to count four AMI meters in the photograph, while the remaining meters appear to be 40 – 50 year old meters (at page 2).

²⁰ BCSEA IR1 15.6.5; BCSEA IR2 79.2 and 86.1.

²¹ Exhibit B-15 – FBC's Response to BCSEA IR2 82.2.

²² See Exhibit B-15, Appendix CEC IR2, 34.1d for the Planetworks Report.

²³ Exhibit B-15 at p. 376.

24. Mr. Tatangelo is correct that only a portion of the 24 meters depicted in the photograph are smart meters, as this photograph was taken during a baseline stage of testing when only nine smart meters were installed as part of the bank of 40 meters. It was not until the second day of testing that the additional 31 smart meters were installed, to determine the RF emitted by a bank of 40 meters. While the Planetworks Report does not include a photograph of the 40 smart meters, Karl Reardon the professional engineer responsible for the report, states that the testing was completed on a bank of forty Itron Openway Centron Meters.²⁴ Further, a complete inventory of each meter utilized in the testing, including its type and badge number, was included in the Planetworks Report.²⁵

B. Project Environment

25. As the British Columbia Municipal Electrical Utilities (**BCMEU**) notes in its submission, “[s]everal of the BCMEU municipal electric utilities represented in this proceeding have previously implemented RF meters in their service territories”.²⁶

26. Mr. Shadrack questions deployment figures which FortisBC has advanced (paras. 65-71). However, it is clear that no matter how the numbers are interpreted that RF has the dominant share of the market for remotely-read meters in North America.²⁷

27. Mr. Miles suggests that “non-RF solutions” are the “more conventional” ones (page 2). This is not the case, as noted in FortisBC’s Main Submission. Rather, RF technology is the predominant form of AMI metering in North America. As Mr. Loski testified:²⁸

MR. WEAVER: Q: Mr. Loski, you would agree that the RF technology – I think there is an IR response, I can’t name it off the top, but that indicates that RF technology is the widely accepted technology for energy utilities, gas and electric, that is what is utilized.

²⁴ Exhibit B-15 at p. 363.

²⁵ Exhibit B-15 at p. 366.

²⁶ Letter dated April 25, 2013 from Christopher Weafer on behalf of BCMEU.

²⁷ See Exhibit B-23 – FBC Supplemental Information.

²⁸ T3, p. 481, ll. 13-26.

MR. LOSKI: A: Right. I'll agree with that as we set out in – I think it was Exhibit B-23. Wireless metering technology is commonplace in utilities throughout North America. I believe it was approximately 50 million wireless water meters, 50 million wireless gas meters, and close to 60 million planned or installed wireless electric meters.

C. Project Need

28. FortisBC adopts the comments of the Commercial Energy Consumers Association (**CEC**) regarding Project need.

29. The BC Pensioners' and Seniors' Organization *et al.* (**BCPSO**) suggests that FortisBC has improperly conflated needs and benefits, or at least not correlated its discussion to those benefits that qualify as “needs” (page 3). While in this case there is “need” even on BCPSO’s definition, it should be noted more generally that the distinction BCPSO seeks to draw is artificial and interprets too narrowly the meaning of the term “public convenience and necessity”.

30. Pursuant to section 45(8) of the *Utilities Commission Act*, the Commission must be satisfied that a proposed expenditure “is necessary for the public convenience and properly conserves the public interest” in order to grant a CPCN. As set out in the Main Submission, the phrases “necessary for public convenience” and in “the public interest” have been held to be synonymous, and the Commission and the Supreme Court of Canada have summarized the test for approval of a CPCN as being whether the project is in the “public convenience and necessity”.²⁹

31. While this phrase uses the term “necessity”, it has been frequently recognized that the test of what constitutes public convenience and necessity is flexible and should involve the consideration of a broad range of interests.³⁰ BCPSO cites the Supreme Court of Canada decision of *Memorial Gardens Association (Canada) Ltd. v. Colwood Cemetery Company (Memorial Gardens)*³¹ for the proposition that a CPCN may only be granted where it meets a specific need. However, *Memorial Gardens* recognized

²⁹ Main Submission at p. 38.

³⁰ *Re British Columbia Transmission Corporation, An Application for a Certificate of Public Convenience and Necessity for the Vancouver Island Transmission Reinforcement Project*, July 7, 2006 at p. 15.

that the term “necessity” in the public convenience and necessity test could not be given its dictionary meaning in a strict sense, and that the Commission had discretion to determine both the need and desirability of a project, as well as the degree of need and desirability.³² Further, *Memorial Gardens* emphasized that when determining whether a project is necessary, future needs may also be considered.³³ This is, of course, sensible, given that funds could otherwise be spent in a short-sighted manner (and perhaps further expenditures would subsequently be required to address later issues). The *Memorial Gardens* approach is contrary to BCPSO’s apparent emphasis in its submission on “immediate need” (pages 5, 15).

32. This type of issue was addressed in the Alberta Court of Appeal decision of *Sincennes v. Alberta (Energy and Utilities Board)*, in which the appellants argued that a proposed transmission line should not have been approved as it did not meet a specific need of Albertans.³⁴ The Court indicated that it was “reluctant to categorize ‘need to Albertans’ as a requisite element of public interest”, particularly given the flexibility accorded to the test by the *Memorial Gardens* decision. In any event, the Court concluded that the proposed transmission line would meet a “need” in the broader sense that it was a “benefit to the citizens and commercial and industrial interests of Alberta”.³⁵

33. FortisBC submits that its Application has properly addressed both the need and benefits of the AMI project, and that these two considerations are, at the very least, highly interconnected. The Commission has a wide discretion to consider and weigh a broad range of interests in determining whether a CPCN should be granted, which necessarily includes the many benefits that will result from the implementation of the AMI Project, both presently and in the future.

³¹ [1958] S.C.R. 353.

³² *Memorial Gardens*, *supra* at p. 5.

³³ *Memorial Gardens*, *supra* at p. 5.

³⁴ 2009 ABCA 167 at para. 64.

³⁵ *Sincennes*, *supra* at para. 70.

D. Project Benefits

(1) General

34. FortisBC acknowledges the comments of CEC that ratepayers will experience substantial financial benefits from the AMI Project, and that the benefits could ultimately be larger than contemplated in the Application.

35. As was indicated at numerous points in the Project Benefits section of the Main Submission, FortisBC adopted a conservative approach in measuring the benefits of the AMI Project. This approach was adopted to account for the fact that there is always uncertainty in making estimates as to future events, and to ensure that the expected benefits of the AMI Project were not overstated. FortisBC recognizes that it would be reasonable to consider the benefits to be larger than quantified in its Application.

36. The conservative approach that FortisBC adopted in quantifying Project benefits should also address the concerns that BCPSO raised in its submissions regarding their size. While BCPSO repeatedly suggests that certain benefits associated by FortisBC with the AMI Project may have been overestimated and are “estimates” (page 9) and/or “speculative” (p. 1), in a sense critics could attach such labels to anything that has not previously occurred in a given jurisdiction. The fact there is never absolute certainty should not be a reason for not proceeding with a project: otherwise the electrical grid would simply stagnate. The conservative approach that FortisBC has adopted minimizes any risk.

37. Further, BCPSO suggests that FortisBC “appears to have underestimated the number of refusals (0.5%)” (at p. 1). The evidence to which BCPSO points is not an estimate of what FortisBC expects, but rather one of the assumptions upon which the Project estimate had been based. In fact, in accordance with that estimate, FortisBC expects the number to be inconsequential given that such refusal would, in general, ultimately lead to disconnection.

38. BCPSO also approaches the issue of customer benefits, including take-up of IHDs, in an unfair manner. It cites Mr. Warren’s specific response to Mr. Flynn’s

situation, in which Mr. Warren fairly did not attempt to convince Mr. Flynn to acquire an IHD, as somehow reflective of a lack of Project benefit more generally. Even as to IHDs specifically, the evidence in aggregate was that FortisBC was forecasting that up to 30 percent of customers will want one of these devices in their house over time.³⁶

39. Several Intervenors have suggested that the cost savings associated with the AMI Project will accrue to the shareholder predominantly or exclusively. For example, Mr. Miles submits that the project is a “one-sided endeavor with the majority of the benefits flowing to the utility” (at p.2). This is incorrect. Under the regulatory construct in which FortisBC operates, the cost savings resulting from AMI will flow through to customers through reduced power purchase costs and/or reduced operating costs. These reductions are reflected in future year revenue requirements and result in reduced rate impacts to all FortisBC customers.³⁷

(2) Electricity Theft

40. Mr. Miles notes on pages 2-3 of his submissions that most FortisBC customers are not electricity thieves. Of course Mr. Miles is correct in this regard, and FortisBC has not suggested otherwise. However, customers who currently steal power are effectively being subsidized by the vast majority of customers who pay their bills. This electricity theft is estimated to result in annual revenue loss of \$3.7 million.³⁸ It is paying customers who bear this cost of electricity theft. The AMI Project would assist in preventing or reducing that burden.

41. At page 9 of its submissions, BCPSO cites Professor Neil Boyd and argues that the anticipated benefits arising from reducing electricity theft are “speculative”. FortisBC has stated on numerous occasions that there is uncertainty associated with predicting long term customer behaviour in an evolving environment.³⁹ FortisBC has responded to this uncertainty by presenting a range of forecasts to the Commission, utilizing

³⁶ T7, p. 1344, ll. 3-5 – Mr. Warren.

³⁷ Exhibit B-11 – FBC’s Response to NCGP IR1 1.

³⁸ Exhibit B-1 – FBC’s Application at p. 83.

assumptions that are supported by recent studies and FortisBC's own records, and by taking a conservative approach in its estimates.⁴⁰ It is after these considerations that FortisBC has determined that the \$43.2 million (including the City of Kelowna)⁴¹ proposed in the Application represents a conservative and reasonable estimate of the benefit.⁴²

42. Further, in suggesting that the allegedly speculative nature of the evidence should prevent the granting of a CPCN (at p. 10), BCPSO ignores the fact that any uncertainty must be balanced with the fact that there are definite safety and financial risks that will be imposed on FortisBC's customers if the status quo is maintained. It is neither reasonable, nor desirable, to delay a response to energy theft.⁴³

E. Project Costs

(1) Comparison to PLC-AMI Costs

43. Mr. Shadrack engages in extensive comparison between the costs of FortisBC's proposed AMI system and the cost information that he has obtained regarding PLC system employed by Idaho Power Company Ltd. (**Idaho Power**), to suggest that a PLC system would be a more cost-effective alternative for FortisBC. This comparison is, however, divorced from the reality of what options are available to FortisBC. Notably:

- (a) FortisBC submitted its RFP to four vendors providing wired solutions, ten vendors providing wireless solutions and two integrators.⁴⁴ In response, FortisBC did not receive any PLC-AMI bids;⁴⁵ and
- (b) The vendors that received FortisBC's RFP included Aclara Technologies LLC (**Aclara**), the vendor that supplied Idaho Power's PLC system and

³⁹ Exhibit B-1 – FBC's Application at p. 83; Exhibit B-14 – FBC's Response to BCUC IR2, 62.3; Main Submission, para. 122.

⁴⁰ Exhibit B-1 – FBC's Application at pp. 82-83.

⁴¹ Exhibit B-1-2 at p. 3.

⁴² Main Submission, at para. 188.

⁴³ Exhibit B-14 – FBC's Response to BCUC IR2 61.3 at p. 150.

⁴⁴ Exhibit B-34 – FBC's Response to BCSEA IR3 107.4.

⁴⁵ Exhibit B-34 – FBC's Response to Shadrack IR3 10.

that Mr. Shadrack extensively relies on. While Mr. Shadrack submits that a PLC system would be a superior alternative for FortisBC, this is evidently not the same conclusion reached by Aclara, which declined to submit a proposal in response to FortisBC's RFP.⁴⁶

44. The fact that Mr. Shadrack disagrees with the outcome of FortisBC's RFP process does not mean that the process itself was unfair or biased in any way. Indeed, Mr. Shadrack appears to be suggesting that FortisBC should ignore the outcome of a fair tender (to which multiple compliant responses were received) and instead negotiate directly with a vendor that did not even submit a response. This could put FortisBC in the untenable position of having tendered in bad faith, and could expose the Company to liability.

45. Respectfully, it is not within the Commission's purview to:

- (a) compel vendors who were not interested in making PLC-AMI bids to submit them;
- (b) compel utilities to chase vendors who did not use their opportunity to make PLC-AMI bids during the RFP process, to the disadvantage of those vendors who did; or
- (c) speculate on what would happen in a new RFP process.

46. Mr. Shadrack invites consideration of ratepayer competitiveness across jurisdictions (paras. 32-35). The premise on which his argument is based is that costs of PLC are lower, which has not been established and in any event does not arise given that no PLC bid was submitted. Further, the type of inter-utility issues that Mr. Shadrack invokes are outside the purview of this proceeding.⁴⁷

⁴⁶ Exhibit B-34 – FBC's Response to Shadrack IR3 24.

⁴⁷ Decision dated October 19, 2010 accompanying Order G-156-10 (2009 Rate Design and Cost of Service Application) at p. 115; Decision dated August 15, 2012 on FortisBC's 2012-2013 Revenue Requirements and Review of 2012 Integrated System Plan Application at pp. 20-21; BC Hydro 2007 Rate Design Decision (December 21, 2007) at p. 33.

47. Further, without having received an RFP response for a PLC-AMI system, it is challenging to compare the available functionality of a PLC system to an RF system.⁴⁸ Mr. Shadrack himself has acknowledged that the cost information that he has provided is “without knowing the veracity of what is attributed and whether appropriate cost comparisons can be made”.⁴⁹ There is no verifiable evidence that the PLC-AMI system installed by the Idaho Power would cost less, or provide the same functionality as the proposed FortisBC AMI system, if it were to be installed in the FortisBC service area.⁵⁰ Again, by declining to submit a proposal in response to FortisBC’s RFP, Aclara’s actions suggests that it was not able to provide a cost-competitive system with similar functionality for the FortisBC service area.⁵¹

(2) Regulatory Costs

48. BCMEU suggests a completely unprecedented allocation of regulatory costs among “Fortis Companies which pursue AMI Projects in the next five years”. Mr. Loski addressed this concept as follows during the hearing⁵²:

MR. LOSKI: A: I'm -- I think I'm going to have to disagree with that, but I'll explain. We have submitted our CPCN application to the Commission for the implementation of our AMI project for our electric customers. And we believe that we have put forward, you know, a good case for that. The costs that we have incurred to date going through this process, and will incur through its completion, we think, are, you know, reasonable and appropriate and prudent costs, and we do expect that a decision will be made on the merits of that CPCN. And, you know, certainly expect that to be successful.

But we are not getting a ruling about RF emissions, in my view, that in any way then relate to, you know, potential gas -- a gas meter application.

49. While regulatory processes sometimes rely on the evidence and findings from other regulatory processes, there should not be charges arising from this reliance. Further, even as to companies involved in the electricity sector, respectfully the

⁴⁸ Exhibit B-34 – FBC’s Response to Shadrack IR3 16.

⁴⁹ Exhibit C13-10 at p. 2.

⁵⁰ Exhibit B-34 – FBC’s Response to Shadrack IR3 16.

⁵¹ Exhibit B-34 – FBC’s Response to Shadrack IR3 24.

⁵² T3, p. 480, l. 24 – p. 481, l. 12 – Mr. Loski.

Commission would not have jurisdiction to allocate costs to utilities that operate outside the province.

(3) Issues Raised by Norm Gabana

50. Mr. Gabana raises various concerns with respect to the analysis of the benefits and costs of the AMI Project. This financial analysis was prepared by FortisBC in accordance with the Commission's suggested guidelines in Order G-50-10 for submitting an application for a CPCN (the **CPCN Guidelines**).

F. Project Alternatives

(1) Existing RFP Process

51. Mr. Shadrack (at paras. 6, 7 and 34) and NCGPCA (at p. 7) have suggested that FortisBC be at liberty to conduct "a thorough and unbiased" RFP process in the future, suggesting a belief that the existing process could not be so characterized. These suggestions are completely inaccurate, and the evidence is clear that FortisBC used a robust, competitive and comprehensive RFP process for the AMI Project to ensure that the best value is obtained for its customers.⁵³

52. In designing the RFP document, a variety of factors were considered to be key requirements for the AMI vendor, ranging from financial/business stability, LAN and WAN specification, functionality and capabilities, experience in providing similar products, security and compliance with Health Canada regulations.⁵⁴ To ensure that these key requirements were captured, the RFP documents were approved by the FortisBC AMI Project Steering Team that was comprised of departmental leaders from across the Company.⁵⁵

53. The FortisBC AMI Project Steering Team was responsible for evaluation the proposals received, and selecting the top three vendors based on their combined operational and financial scores. From this shortlist, product demonstrations were

⁵³ Exhibit B-34 – FBC's Response to Shadrack IR3 1.

⁵⁴ Exhibit B-1 – FBC's Application at pp. 54-55.

⁵⁵ Exhibit B-1 – FBC's Application at p. 53.

received and references checked, with Itron ultimately being selected as the best vendor.⁵⁶

54. The RFP process utilized by FortisBC was both thorough and unbiased. Despite the fact that the RFP document was filed in its entirety in this proceeding, tellingly the Interveners that have raised concerns with the RFP in their final submissions do not previously appear to have levelled any specific criticism against either the criteria or process.⁵⁷

55. In his submissions, Mr. Miles suggests that “there was never an intention in developing the RFP to fairly consider or investigate the issues and potential harm around advancing the RF solution”, based on the fact that the Exponent Report was commissioned after the RFP process was completed (at p. 4). However, the RFP documents specifically identified that compliance with Health Canada regulations would be a key requirement in FortisBC’s determination of a vendor.⁵⁸ The RFP did not specify the type of communication technology that was to be utilized by the AMI system,⁵⁹ and the RFP was sent to vendors that provided wired, wireless, and integrated solutions.⁶⁰

56. While Mr. Miles indicates that receiving the Exponent Report before undertaking the RFP process may have resulted in a PLC solution receiving “better consideration” (at p. 4), FortisBC did not receive any proposals for PLC systems.⁶¹ In any event, FortisBC sought the Exponent Report for two purposes: to receive an update on the latest science with respect to RF fields and to re-affirm that the proposed Itron system complied with Safety Code.⁶² Neither of these purposes became necessary until FortisBC selected to proceed with a RF system. Further, the Exponent Report could not be commissioned until a vendor was selected, as in the event of an RF installation “you

⁵⁶ Exhibit B-1 – FBC’s Application at p. 55.

⁵⁷ Exhibit B-11 – FBC’s Response to BCSEA IR1, Appendix 8.1.

⁵⁸ Exhibit B-1 – FBC’s Application at p. 55.

⁵⁹ Exhibit B-1 – FBC’s Application at p. 55.

⁶⁰ Exhibit B-34 – FBC’s Response to BCSEA IR3 107.4.

⁶¹ Exhibit B-34 – FBC’s Response to Shadrack IR3 10.

⁶² Transcript, Vol. 3, p. 4850 ll. 7-15.

need the details of the characteristics of the exposure in order to be able to provide a meaningful report”.⁶³ Essentially, it was necessary for Exponent to understand the exact system that was to be installed, prior to conducting its testing.

(2) Compliance with the CPCN Guidelines

57. Mr. Shadrack suggests that FortisBC has failed to provide sufficient information regarding the availability and cost implications of PLC as a project alternative (submissions at para. 7; confidential submissions). This characterization is entirely unwarranted, as FortisBC has fully complied with the CPCN Guidelines.

58. Appendix A to the CPCN Guidelines indicates that in preparing a CPCN application an applicant “should identify alternatives that it deemed to be not feasible at an early screening stage, and provide the reason(s) why it did not consider them further”.⁶⁴ In contrast, it is suggested that an application include information regarding the costs, benefits and risks associated with *feasible* alternatives to the proposed project.⁶⁵

59. Given that FortisBC did not receive a single PLC proposal from any vendors during the RFP process,⁶⁶ even apart from any other considerations it would have been clear from an early stage that utilizing PLC-based technology was not feasible. As suggested by the CPCN Guidelines, FortisBC identified in its Application the fact that PLC was an alternative to the AMI Project, but that no proposals were received.⁶⁷

60. While the CPCN Guidelines did not require that FortisBC include cost information for non-feasible alternatives, FortisBC went above and beyond the CPCN Guidelines and obtained an estimate of the capital costs that would be associated with a PLC system from Itron.⁶⁸ FortisBC was again able to confirm the non-feasibility of a PLC AMI

⁶³ T3, p. 487, ll. 20-26 – Mr. Warren.

⁶⁴ CPCN Guidelines at p. 5.

⁶⁵ CPCN Guidelines at p. 6.

⁶⁶ Exhibit B-1 – FBC’s Application at p. 112.

⁶⁷ Exhibit B-1 – FBC’s Application at p. 112.

⁶⁸ Exhibit B-1 – FBC’s Application at p. 112.

solution within the FortisBC service territory, on the basis that it was not cost-competitive with the proposed AMI Project.⁶⁹

(3) Blue Line

61. Mr. Shadrack refers at paragraph 50 of his submission to “Blue Line” technology as being able to “provide the same functionality as Zigbee without even being deployed in a smart meter”. However, as Mr. Chernikhowsky testified at the hearing⁷⁰:

MR. CHERNIKHOWSKY: ...it does not actually give you same information. The Blueline device simply gives you consumption information, whereas in the case of the ZigBee interface to the meter, FortisBC would be able to send you other information beyond just your consumption. For example, we could provide you with pricing information. If it was, again in the future, if there were different rate structures approved, pricing information, critical peak time information and just general messages could be conveyed. Outage information, for example.

So it does not convey the same information.

62. Mr. Chernikhowsky also noted that generally the Blue Line models sold are wireless, though there is a wired option.⁷¹

G. Privacy

63. Overall, Interveners have largely accepted FortisBC’s submissions with respect to the privacy aspect of the AMI Project. While BCPSO has taken the position that the AMI Project unnecessarily collects too much private information (at p. 20), the evidence demonstrates that this assertion is incorrect.

64. As was described in more detail in the Main Submission, the AMI system will not alter the type of consumption information that is collected by FortisBC: it will simply be collected on a more frequent basis. This information continues to be in aggregate form, and will not reveal how or precisely when the energy was consumed.⁷² While BCPSO suggests that this data will allow analysts to accurately identify specific details of

⁶⁹ Exhibit B-1 – FBC’s Application at pp. 114-115.

⁷⁰ T2, p. 294, ll. 7-18 – Mr. Chernikhowsky.

⁷¹ T2, p. 295, ll. 12-18.

⁷² See Main Submission at paras. 328 and 330 for more details.

personal routines, any such attempts would be guesses at best. During testimony, Mr. Chernikhowsky commented on why the collected information would not reveal these personal details.⁷³

MR. CHERNIKHOWSKY: A: I think in the end, I don't think the positions actually are all that different. And I'll give you a specific example perhaps that might be helpful. Imagine we see a customer has consumed, within an hour, 100 watt hours or a tenth of a kilowatt hour of electricity. So what does that represent? Did you have a 100 watt light bulb on for that entire hour? Maybe your fridge came on and cycled on for about 10 minutes. Maybe you boiled a pot of water or you toasted a bagel for 4 and a half minutes. All of those use exactly the same amount of electricity, 100 watt hours. So there is no way from just that single number alone to know what the customer is doing with the electricity. In a more aggregate sense, a customer that's consuming high amounts of power may or may not be home. Again, they may have a pool pump, a small pump, other equipment that they're using whether they're home or not. So in and of itself it's very difficult to tell whether a home owner is present simply by looking at consumption information. Ultimately I'd say the easier way is to simply go and look at the premises and see if they're there or not.

MR. WEAFFER: Q: I think the Privacy Commissioner's sentence was a little more firm in terms of it could reveal whether people are home or away, and I take it you're saying maybe, maybe not?

MR. CHERNIKHOWSKY: A: Again I go back to just based on the numbers alone, I think that would be imprecise to say that you could determine whether someone is home or not.

MR. WEAFFER: Q: Your evidence filed is it does not Fortis to tell whether a person is home.

MR. CHERNIKHOWSKY: A: I think patterns obviously is a big part of it as well. Usage patterns will help determine whether someone is home or not. Ultimately again, the information that's being gathered here is really no different than the information that's present on an electric meter today. You could go up to an electric meter and read the exact same consumption information from the front panel display of the meter.

....

MR. CHERNIKHOWSKY: A: So, fair enough. However, we need to keep in mind that the system itself, all it communicates on a per customer basis are two pieces of information. One is the consumption and one is the meter number itself. It doesn't actually contain any information as to the customer, owner of the premises, owner address, anything like that. It

⁷³ T2, p. 215, l. 7 – p. 216, l. 22, p. 217, ll. 3-16.

simply has the meter number. The information that cross-references that meter number to a customer information is stored securely back in FortisBC's data centre. So even in the extremely unlikely event that someone was able to intercept that information, they would simply have the consumption for a meter. They would have no idea what meter that would represent.

65. BCPSO cites a passage from the BC Information and Privacy Commissioner in support of its position that AMI meters will reveal details of customers' daily routines and specific equipment use (at pp. 20-21). This is not a correct interpretation of the cited passage, which states that any conclusions beyond whether people are home or away "would be merely speculative" (at p. 21). There is nothing in the evidence to suggest that information collected by AMI meters will reveal "how many people live in a home, and their daily routines, such as sleep, work, and travel patterns" (at p. 20).

66. Additionally, it is simply incorrect for BCPSO to suggest that this supposedly sensitive information will suddenly be available to "law enforcement, private litigants, insurance companies, marketers, product developers, criminals and others" (at p. 20). As is presently the case, and as will continue to be the case if the AMI Project is implemented, there are only very limited circumstances where FortisBC may disclose any customer information to third parties. Any such disclosure is made in accordance with the FortisBC Privacy Policy, which fully accords with applicable privacy legislation.⁷⁴ While BCPSO suggests that the collected information would be "valuable to numerous parties" (at p. 21) including marketers (at p. 20), such a disclosure would be contrary to the FortisBC Privacy Policy.⁷⁵ FortisBC has repeatedly indicated that it will not be selling customer information, including, for example, in the following testimony of Mr. Loski:⁷⁶

MR. ATAMENENKO: Q: Thank you, Mr. Loski. My last question. Can this information be sold to third parties such as a marketing agency, or is there something in place that would prevent that?

MR. LOSKI: A: Two things I would say to that. First of all, currently we do not do that. We do not sell customer information nor do we intend to, and

⁷⁴ Exhibit B-9 – FBC's Supplemental Privacy Information, Attachment 2 – FBC Privacy Policy, s. 4.2.

⁷⁵ Exhibit B-9 – FBC's Supplemental Privacy Information, Attachment 2 – FBC Privacy Policy, s. 4.2.

⁷⁶ T2, p. 301, ll. 17-25; T3, p. 339, ll. 15-25.

it is against both our privacy policy and the legislation to do so without customer's consent.

67. While BCPSO asserts that "it is not obvious that FBC needs to collect hourly consumption data as part of the AMI Project" (at p. 21), BCPSO has disregarded the fact that many of the benefits associated with the AMI Project require the collection of hourly consumption data. These include customer service benefits such as conservative rate structures⁷⁷ and enhanced billing information,⁷⁸ operational benefits such as enhanced system modelling,⁷⁹ improved financial reporting, load forecasting and cost of service analyses⁸⁰ and improved power quality monitoring,⁸¹ and future benefits such as power grid voltage optimization,⁸² future conservation rate structures,⁸³ and furtherance of FortisBC's smart grid vision.⁸⁴

68. Finally, FortisBC disagrees with BCPSO's submission that numerous additional conditions should be attached to FortisBC's collection, use and disclosure of information, if it is permitted to collect hourly information (at pp. 23-24). As was described in the Main Submission, the AMI Project will be fully compliant with PIPPA, the applicable privacy legislation,⁸⁵ and FortisBC has recently updated the FortisBC Privacy Policy in anticipation of the implementation of the AMI Project. BCPSO's suggestions attempt to import privacy requirements that are only applicable to public bodies under the *Freedom of Information and Protection of Privacy Act*, and that the legislature has excluded as requirements for private organizations under PIPPA. Further, suggestions that FortisBC maintain duplicate privacy policies or refuse to provide necessary information to its partners or suppliers create unnecessary administrative burdens and would detrimentally impact FortisBC's ability to do business.

⁷⁷ See Main Submission at p. 75.

⁷⁸ See Main Submission at p. 76.

⁷⁹ See Main Submission at p. 81.

⁸⁰ See Main Submission at p. 82.

⁸¹ See Main Submission at p. 85.

⁸² See Main Submission at p. 87.

⁸³ See Main Submission at p. 90.

⁸⁴ See Main Submission at p. 92.

⁸⁵ See Main Submission at p. 108.

H. Security

69. With the exception of CEC, which supports FortisBC's position that its proposed AMI project is secure, and Mr. Tatangelo (page 2), whose submissions relate to potential hacking and are not in accordance with FortisBC's evidence, Interveners have not addressed security in their submissions. CSTS, which adduced the evidence of Dr. Jamieson in this regard, rightly does not rely on his submissions on this point at all.

I. Health

(1) Overall Exposure Levels

(a) RF Exposure from AMI Meters

(i) General

70. In general response to those Interveners expressing concerns that exposure to RF from AMI meters might potentially be linked to health problems, it bears repeating that actual RF exposure levels from the proposed AMI meters are, as noted by Dr. Bailey in his testimony, "vanishingly small".⁸⁶ There is thus little intersection between the AMI Project and any broader issues of RF and health. While we do address various particular points that Interveners have raised, that context is fundamental.

71. In this regard:

- (a) the exposures from the proposed AMI meters are only a minute fraction of the exposure levels deemed acceptable by Health Canada in Safety Code 6.⁸⁷ CSTS witness Dr. Maisch, who was qualified as an expert in health standards relating to exposure to electromagnetic radiation, agreed that the real-world RF exposure from AMI meters, when factors such as mean duty cycle, building materials and a distance of 50 cm were accounted for, would be 300,000 times below what Safety Code 6 contemplates.⁸⁸ CEC

⁸⁶ T3, p. 502, ll. 24-25 – Dr. Bailey.

⁸⁷ See FortisBC Main Submission at pp. 149-156 for a more thorough review of the evidence of actual exposure levels.

⁸⁸ T8, p. 1596, l. 15 – p. 1609, l. 3 – Dr. Maisch.

submits that actual RF exposure from AMI meters could be 1,000,000 times below Safety Code 6 limits.⁸⁹

- (b) While some Interveners allege that RF exposure may be related to health problems at levels below the Safety Code limits, none of them is able to point to any evidence of health problems at or remotely near the actual exposure levels from AMI meters.
- (c) RF exposure from the AMI meters also complies with all other binding national and international standards, including the Russian standards that CSTS highlights through the quotation at the top of page 8 of its submissions. The evidence is that AMI meter exposure meets RF safety limits applicable in Russia, China, Poland, Germany (ICNIRP standard), Luxembourg, Italy and Switzerland.⁹⁰ The report of CSTS expert Dr. Maret illustrated that even at maximum supported duty cycle, the AMI meter operates far below exposure limits applicable in the United States (FCC), Greece, Belgium, Italy, Israel (for long-term exposure), China, Russia and Poland.⁹¹ Dr. Shkolnikov gave evidence that under typical use, the AMI meters would meet the exposure limits in the BioInitiative 2007 report even on a 24/7 continuous exposure basis.⁹² Indeed, Dr. Shkolnikov further noted, as to the BioInitiative 2012 Report which is returned to in paragraph 148 below:⁹³

So once you reduce by the duty cycle, that could be sustained for a long duration of time, once you include the larger distance to the building, once you include the factor of 10 difference between the values at the front of a smart meter and the back of the smart meter, the building and the time at home considerations, which is what I believe Mr. Weafer's submission was, that they have calculated that if you do that comparison to Bioinitiative report, you

⁸⁹ CEC Final Submission at paras. 315-319.

⁹⁰ See FortisBC Main Submission at pp. 147-149 for a more thorough review of the evidence of standard compliance.

⁹¹ Exhibit C9-8 Tab 5C – Maret Report at pp. 8 and 13.

⁹² T5, p. 901, l. 24 – p. 904, l. 14 – Dr. Shkolnikov.

⁹³ T7, p. 1321, ll. 2-12.

would actually fall right in the range, or maybe at the higher end of Bioinitiative 2012 value.

Dr. Shkolnikov continued:⁹⁴

Bioinitiative 2012, there's actual -- it's actually miracle that any technology can meet those limits because it would be exceeded by FM radios, TV radios and Bioinitiative report dedicates a large fraction of what is -- about 1600 pages describing which technologies across a spectrum will exceed the limit, and it is actually a surprise that, the fact that smart meter -- or the advanced meter in this case would actually fall below those limits, because it takes -- it's actually quite a significant undertaking to design a technology like that.

(ii) *Burst Transmission*

72. CSTS refers to certain of its experts' statements speculating, without supporting evidence, as to the possibility that transmitting in bursts of RF could, in some unexplained fashion, have effects distinct from those found when RF exposure is calculated through averaging, as is required by Safety Code 6 and Industry Canada (pages 57-58). When Dr. Bailey was cross-examined on the effects of burst patterns, he stated as follows⁹⁵:

Dr. Bailey: A: I did not make a specific distinction between the different modulation types in terms of assessing the potential impact of radio frequency field exposure, because there is general agreement in the scientific community, except for Dr. Maret here, that the differences in modulation do not result in any reliable or confirmed biological responses.

Mr. Aaron: Q: All right. So there's no consensus in the scientific community on that issue.

Dr. Bailey: A: Well, if you define consensus by unanimity, I would agree. But for the reviews that I have referenced by national and international health agencies, I would characterize their position as being that modulation is not an important aspect of the assessment.

⁹⁴ T7, p. 1322, l. 21 – p. 1323, l. 6.

⁹⁵ T4, p. 686, l. 23 – p. 687, l. 12 – Dr. Bailey.

(iii) “Irradiation”

73. WKCC claims that Mr. Warren confirms that FortisBC will irradiate 17,000 square kilometres. This is not the case. Mr. Warren stated that FortisBC would communicate with AMI meters over 17,000 square kilometres.⁹⁶ As Dr. Shkolnikov stated, WKCC’s terminology is unhelpful because radiation simply means propagation of energy away from the source:

Mr. Bennett: Q: Yeah, and the only thing I would say, that is just – because this is new and we haven’t radiated 17,000 square kilometres before, there just isn’t that standard. Would you agree?

Dr. Shkolnikov: A: We have. The GPS system covers the earth basically over the entire surface and has to comply with a very tight standard on the minimum signal arrived at a specific area. As I said, your cell phone, by your argument, is irradiating, just your cell phone right now is irradiating a 10 mile radius around you to everybody exposing you. But it’s a wrong terminology. The question does a signal go there versus is that signal detectable, and then it’s a signal causing biological effects are three completely separate questions, because I can also say that your cell phone is irradiating the whole, you know, as the speed of light propagates, is irradiating the whole universe, because there’s nothing physically stopping it from propagating throughout the whole universe. And so this terminology of irradiating is not informative for purposes of engineering analysis.

Mr. Bennett: Q: Electromagnetic radiation, isn’t it radiation?

Dr. Shkolnikov: A: So is the voice I’m speaking with. I’m using acoustic energy which is also referred to as acoustic radiation when I’m talking to you. Your heater at home is producing heat radiation. And this is where the word “radiation” becomes important. Radiation means propagation of energies through space. You know, you don’t say that I’m using acoustic radiation to speak to you. You say I use verbal communication with you. With smart meters you say they communicate using RF signals. And with the radiator you say they just dissipate heat into the environment. But in all the cases that we’re referring to it’s radiation. It’s just a term that literally means propagation of energy away from the source.

Mr. Bennett: Q: You’re absolutely right...⁹⁷

⁹⁶ T6, p. 1172, ll. 13-20 – Mr. Warren.

⁹⁷ T6, p. 1222, l. 13 – p. 1223, l. 26 – Dr. Shkolnikov.

(iv) Maximum Theoretical Duty Cycle

74. On page 49 of its submissions, CSTS refers to the maximum theoretical duty cycle of 5%. Notably, this theoretical maximum is not observed in field tests.⁹⁸ The best estimate of FortisBC AMI meter duty cycle that would be sustained for an extended period of time is the average duty cycle of 0.06 percent (approximately 52 seconds a day).⁹⁹

(b) Zigbee RF Emissions

75. While Mr. Flynn asserts in his submissions that FortisBC has somehow sought to conceal the fact of RF emissions from Zigbee devices, those are squarely addressed in the technical memorandum that is appended to the Exponent Report. That appendix commences by describing the two transmitters with which the proposed meters would be equipped, and discusses the compliance of both with Safety Code 6.¹⁰⁰

(c) “Relays”

76. Mr. Flynn refers on page 5 of his submissions to “an extraordinary number of relays” that he alleges will be required in a meshed-grid network, which he alleges will add to RF exposure. This was addressed in cross-examination, which included the following exchange¹⁰¹:

MR. FLYNN: Q: In a mesh network community of 500 homes, can you discuss for the Commission the effect of relays? In 500 homes, not every home can see the utility -- or sorry, see the collector. Therefore they have to rely on relays, which means that homes will wear additional radiation.

MR. WARREN: A: I'm sorry, I wasn't expecting to get into this level of detail about the radio system. The number, the average duty cycles in the Itron White Paper take into account all of those relays, of course, of data. So, the duty cycles that we have cited would take into account all of the relay information. Going from memory, and subject to check, I'm thinking that the average mesh depth, which is essentially the number of relays, is on the order of four or five, maybe as low as three, something like that. But it will depend. In a mesh network sometimes there will be no hops at

⁹⁸ Exhibit B-47 at p. 3.

⁹⁹ Exhibit B-47 at p. 3.

¹⁰⁰ Exhibit B-1 – FBC's Application, Appendix C-5, eg. at pp. 42 and 44 of 47.

¹⁰¹ T7, p. 1344, l. 13 – p. 1345, l. 6.

all, and sometimes there will be more than that average. [underlining added]

(d) Other Sources of RF Emissions

77. On page 3 of his submissions, Mr. Flynn sets out a list of what he purports to be wireless devices. As Dr. Shkolnikov addressed in his testimony, some of these are not in fact wireless RF devices. Dr. Shkolnikov noted that CT scans are not a source of RF or ionizing radiation, for example.¹⁰²

78. When RF exposure from other RF emitting devices is taken into account, as Undertaking No. 9 demonstrates¹⁰³ the total is small and the contribution of the proposed AMI meters exceptionally so.

(e) Smart Appliances

79. Mr. Flynn repeatedly suggests that 15 or so smart appliances will be used in homes (see, e.g., page 4 of his submissions). FortisBC does not plan for a specific number of smart appliances that a customer may acquire or elect to link to the customer-controlled HAN, as those are solely customer decisions. Indeed, however, Mr. Warren testified that the 15 suggested by Mr. Flynn seemed to him “very high”.¹⁰⁴ What FortisBC is forecasting is up to 30 percent penetration of IHDs over time.¹⁰⁵

80. As Mr. Loski testified:¹⁰⁶

MR. LOSKI: A: I have first a comment to make about one assertion that was in there. And then I'll – and then get to the second point. So first, you mentioned that utility companies -- I think you specifically said FortisBC, I believe that's what I heard, envisioned or envisaged that there will be 15 or so smart appliances in each home. FortisBC has not said that in this record. In fact, if that may be what the -- how the future unfolds. I can't say with certainty, and I certainly have not made that claim.

That, if it does unfold like that, in a customer's premise, would be entirely up to each individual customer making their purchase decisions with

¹⁰² T7, p. 1254, ll. 10-26 – Dr. Shkolnikov.

¹⁰³ Exhibit B-52.

¹⁰⁴ T7, p. 1335, ll. 2-8 – Mr. Warren.

¹⁰⁵ T7, p. 1342, ll. 13-22 – Mr. Loski.

¹⁰⁶ T3, p. 334, ll. 4-18.

respect to their appliances. So I just wanted to clarify that assertion that was made.

(f) Exposure in High Rise Apartments

81. Mr. Flynn refers on page 4 of his submissions to a concern about exposure for “occupants of large, hi-rise apartment buildings”. Levels of exposure in those circumstances were addressed in the Exponent report¹⁰⁷:

Exposure from multiple advanced meters

Since the signal strength from a advanced meter falls off greatly with distance and advanced meters are typically installed one per house, the additional exposure from other, more distant advanced meters is negligible. A advanced meter as close as 5 m adds only 1/100 of the exposure of the advanced meter at 0.5 m (and at 16 m, ~1/1,000 the exposure). At greater distances the contribution from another advanced meter is far less.

Moreover, most multiple-meter installations are located far from the residential areas, separated from such areas with external walls or floors. The fall off of the signal with distance combined with attenuation from construction materials will negate most, if not all, added exposure from multiple-meter communication. [underlining added]

82. This subject was also addressed extensively in questioning by Ms. Enns. Mr. Warren noted, for example¹⁰⁸:

...in a real situation, especially where in a lot of apartment buildings the meter room -- not all of them but a lot of the meter rooms they have at minimum a wall but often a concrete wall as well, right, and so you may get quite significant attenuation or reduction in the signal out of the meter room.

(2) Canadian Authorities or Commentary

(a) Health Canada

(i) Alleged Shortcomings of Safety Code 6

(A) Thermal vs. Non-Thermal Effects

¹⁰⁷ Exhibit B-1 – FBC’s Application, Appendix C-5 at p. 44 of 47.

¹⁰⁸ T7, p. 1372, ll. 7-13 – Mr. Warren.

83. On page 9 of his submissions, Mr. Flynn alleges (based on internet commentary which is not itself in evidence, though it has been referred to) that “[i]n 2013, Health Canada scientist, James McNamee, admitted in Québec Superior Court in Feb. 2013 that for frequencies between 100 kHz and 300 GHz Safety Code 6 is based ONLY on heating!” As the actual transcript from that hearing (which is in evidence) shows, Dr. McNamee did not say this. Rather, he said:

This guideline, it’s actually not a guideline, it’s a safety code, takes into account both thermal and non-thermal effects. In a low-frequency range, the effects we’re preventing against are peripheral nerve stimulation, which is a non-thermal effect. We will provide protection against any established health effect, whether it is thermal or non-thermal. So, to say it is only a thermal guideline is technically incorrect.

Where it is somewhat correct is that in the frequency range used by wireless devices, the effect we’re trying to protect against is a thermal effect because that is the effect which has been established, the only effect which has been established. Not to say that you couldn’t have nerve and muscle stimulation from exposures to those frequencies, but they would occur at higher intensities than that which a thermal effect would occur. So, basically, we’re taking the lowest exposure level which produces an adverse health effect and using that. So, we consider both the non-thermal and the thermal effects literature when establishing a safety code.¹⁰⁹

84. While CSTS also alleges, on page 48 of its submissions, that “Dr. Bailey confirmed that the basic restrictions in Safety Code 6 are designed to limit temperature increases in tissues”, the evidence clearly is that Safety Code 6 is intended to protect against all adverse effects. For the frequencies utilized by AMI meters, the adverse effects with the lowest thresholds are for thermal induced effects; other effects (such as stimulation) require much greater exposure. Therefore, protection against adverse thermal effects protects against both thermal and non-thermal effects, as confirmed by the introduction to Safety Code 6 itself.

85. CSTS also claims that Dr. McNamee’s testimony demonstrated Health Canada’s entrenched approach and the manner in which it is dismissive to evidence of non-thermal effects. CSTS cites Dr. McNamee’s statement that Health Canada did not

¹⁰⁹ Exhibit B-46 at pp. 41-43.

consider a particular article, Levitt & Lai (2010), in reviewing Safety Code 6 in 2009. On the next page following CSTS's quotation, Dr. McNamee clarifies:

Studies that would have been published prior to mid-2009 or late 2009 would have been considered. Anything published after 2009, would not. So, the Levitt & Lai article came after that date. And having said that, we're well aware of all of these studies. If we saw something in any study published after our last safety code that prompted us great concern or worry, or challenged the limits, we would change them, we would not wait for, you know, a periodic review.¹¹⁰

86. In its criticism of Health Canada's use of the weight of evidence approach to review of scientific studies (a topic discussed further below under subheading 10(b)(iii)), CSTS also omits a highly relevant portion of Dr. McNamee's testimony, which was quoted at page 23 of CSTS's final submissions (the portions of this passage omitted by CSTS are underlined):

Q. 153 And do I understand that, even though there is out there some studies regarding non-thermal effects for our frequency, the position of Health Canada is that none of these studies, because it's what it's saying in Safety Code 6, is relevant and there's no change?

A. We recognize that there are a large number of studies assessing virtually every health endpoint there is. There are a large number that show an adverse effect here, an adverse effect there. So, I'm not denying that there are studies showing effects, no question. **There are also a large number of studies that don't show effects, and generally, a much larger number of studies, in many cases much more thorough and much more well-conducted.**

Q. 154 That's the weight of evidence that you're talking about?

A. Yes, exactly.

Q. 155 But the position...

A. The position is...

Q. 156 ... am I correct saying that non-thermal [sic] effects for our frequency, there's no evidence, that's what you're saying?

A. I'm not saying there's no evidence, I'm saying...

¹¹⁰ Exhibit B-46 at pp. 54-55.

Q. 157 Adverse effect.

A. ... based on the weight of evidence review.

Q. 158 I'm sorry, there's no health adverse effect?

A. Yes. [underlining and bold emphasis added; ellipses in original]

(B) Chronic Exposure

87. While CSTS alleges that "Safety Code 6 give[s] no consideration to chronic exposure" (page 49), as Mr. Warren commented¹¹¹:

So, is it your evidence from that exchange -- I know there is a lot of interruption there -- is it your evidence that Safety Code 6 limits are intended to address 20 years of perpetual exposure?

MR. WARREN: A: Yes. And I say that for a simple reason, is that from reading the mandate and the methodology of Health Canada with respect to Safety Code 6, they take into account all studies and literature that are relevant to setting the Code, and the Code is absent a duration limitation, and therefore one isn't necessary.

MR. AARON: Q: Ah, okay. So, it doesn't say anywhere in Safety Code 6 that it addresses 20 years of perpetual exposure, does it?

MR. WARREN: A: No, which is exactly how I --

MR. AARON: Q: Your point.

MR. WARREN: A: -- reached my conclusion.

MR. AARON: Q: You're saying from the silence of it to address 20 years of exposure, from the omission of any reference to any long-term limits on exposure. From that, you take that it addresses 20 years of perpetual exposure. Okay, thank you.

(C) Asserted Distinction Between Exposure Standards and Risk Assessment

88. CSTS contrasts exposure standards and risk assessment on page 59 of its submissions. However, risk assessment itself provides the input or basis for exposure standards. As noted in the Exponent Report¹¹²:

¹¹¹ T5, p. 792, ll. 1-23.

The RF standards are called 'safety standards' because they address issues of human health and safety, and they prescribe exposure limits for a level in the environment presumed harmless. An exposure limit is the amount of exposure to RF at a specified frequency or a range of frequencies that should not be exceeded in order to protect human health with an adequate margin of safety.⁵

These exposure limits are based on the risk assessment process, those established scientific and technical methods for reviewing biological and health research. The RF standard in Canada, for example, uses a 50-fold reduction factor below an effect level reported in research studies to arrive at an exposure limit for all members of the general public (Health Canada 2009, p.9). [underlining added]

(D) Other Substances

89. In the absence of evidence that RF exposure from AMI meters has adverse health effects, Mr. Shadrack (page 27, para. 95) and Mr. Atamanenko (page 2) attempt to draw parallels with products such as DDT, Thalidomide, asbestos and lead which are now known to be dangerous. Just as the public is aware of these past consumer product issues, regulatory agencies and scientists are aware of them and have learned from these experiences. Mr. Shadrack and Mr. Atamanenko do not cite any evidence that such comparisons are valid, such as evidence of the nature of regulatory oversight of such products at relevant times or evidence that there was a substantial body of scientific research supporting the safety of such products at relevant times.

(ii) Whether Safety Code 6 Is Binding

90. CSTS alleges that "there is simply no basis for the application of Safety Code 6 to these proceedings or the proposed AMI program" (page 46). CSTS's position that Industry Canada's licensing procedures do not apply to the AMI meters is incorrect. As set out in paragraphs 433 to 436 of FortisBC's Main Submission, Safety Code 6 applies to radiocommunication apparatus designed to be used within the vicinity of the human body, including the AMI meters, through Industry Canada's Radio Standards Specifications RSS-102 – Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) (**RSS-102**). Further, the

¹¹² Exhibit B-1, Appendix C-5 at p. 15 of 47.

combined operation of Industry Canada's RSS-210 – Licence-exempt Radio Apparatus (All Frequency Bands) (**RSS-210**) and RSS-Gen – General Requirements and Information for the Certification of Radio Apparatus (**RSS-Gen**) apply limits contained within Safety Code 6 to specified types of radio apparatus used for radiocommunication other than broadcasting which employ frequency hopping and digital modulation technology in the 902-928 MHz band, including the AMI meters.¹¹³

91. CSTS is correct that the AMI meters are exempt from licensing requirements, as they operate on the 902-928 MHz band. However, this exemption is a qualified one which does not relieve the AMI meters from the burden of compliance with Safety Code 6 through the requirements of the above-mentioned Industry Canada Radio Standards Specifications (certification is also required but no Intervener has taken issue with FortisBC's compliance in that regard).

92. The *Radiocommunication Act*, R.S.C. 1985, c. R-2, establishes at s. 4(1) and 4(1)(a) that operation and possession of radio apparatus is prohibited except where exempted under regulations made under s. 6(1)(m):

4. (1) No person shall, except under and in accordance with a radio authorization, install, operate or possess radio apparatus, other than

(a) radio apparatus exempted by or under regulations made under paragraph 6(1)(m); or

(b) radio apparatus that is capable only of the reception of broadcasting and that is not a distribution undertaking.

93. Section 5(1)(d) of the *Radiocommunication Act* states:

5. (1) Subject to any regulations made under section 6, the Minister may, taking into account all matters that the Minister considers relevant for ensuring the orderly establishment or modification of radio stations and the orderly development and efficient operation of radiocommunication in Canada,

(d) establish technical requirements and technical standards in relation to

(i) radio apparatus,

¹¹³ FortisBC Main Submission at pp. 139-140.

(ii) interference-causing equipment, and

(iii) radio-sensitive equipment,

or any class thereof;

94. Section 6(1)(m) of the *Radiocommunication Act* states

6. (1) The Governor in Council may make regulations

(m) prescribing radio apparatus, or any class thereof, that is exempt, either absolutely or subject to prescribed qualifications, from the application of subsection 4(1); [underlining added]

95. The Governor in Council has established such regulations. The preamble to the Radiocommunication Regulations, SOR/96-484 (the **Regulations**) specifically notes that the Regulations are “pursuant to section 6 of the *Radiocommunication Act*”. The Regulations establish an exemption subject to prescribed qualifications, as is specifically provided for in s. 6(1)(m) of the *Radiocommunication Act*.

15. Radio apparatus that is set out in and meets a standard set out in the Licence-exempt Radio Apparatus Standards List, October 2010 is exempt from the application of subsection 4(1) of the Act in respect of a radio licence.

96. The Licence-exempt Radio Apparatus Standards List, October 2010 is appended to CSTS’s Final Submission. It includes RSS-Gen, RSS-102 and RSS-210. These standards apply to the AMI meters and require compliance with Safety Code 6:

- (a) RSS-102 applies to an AMI meter as it is a radiocommunication apparatus designed to be used within the vicinity of the human body, specifically a fixed transmitter having an integral antenna.¹¹⁴ RSS-102 states that “[i]t is the responsibility of proponents and operators of antenna system installations to ensure that all radiocommunication and broadcasting installations comply at all times with Health Canada’s Safety Code 6...”.¹¹⁵ RF exposure evaluation would normally be required because the separation distance between the user and the AMI meter’s radiating

¹¹⁴ RSS-102, s. 1.

element is greater than 20 cm; however, the AMI meters are exempt from routine evaluation because they operate below 1.5 GHz and their maximum equivalent isotropically radiated power (EIRP) is less than 2.5 W.¹¹⁶ This exemption from routine evaluation is not an exemption from compliance.¹¹⁷ The RF exposure limits from Safety Code 6 are again applied at s. 4 of RSS-102, and Safety Code 6's limits for devices used by the general public (uncontrolled environment) are even re-stated at s. 4.2 of RSS-102.

- (b) RSS-210 applies to radio apparatus in all frequency bands, and applies to AMI meters as they are frequency-hopping systems operating in the 902-928 MHz band.¹¹⁸ RSS-210 specifies that the requirements in RSS-Gen must also be met,¹¹⁹ but does not itself require compliance with Safety Code 6.
- (c) Due to the applicability of RSS-102 and RSS-210, the AMI meters are listed on Industry Canada's Category I Equipment Standards List.
- (d) RSS-Gen sets out general requirements applicable to Industry Canada certification of radio apparatus used for radiocommunication other than for general public broadcasting services, and (with the exception of one section, which is not relevant) applies generally to radio apparatus whether or not it is exempt from licensing.¹²⁰ In a section titled "Exposure of Humans to RF Fields", RSS-Gen requires that both Category I and Category II equipment must comply with the applicable requirements of

¹¹⁵ RSS-102, s. 1.

¹¹⁶ RSS-102, s. 2.5.2 and Exhibit C9-19. The latter is the ACS Certificate Document which sets out that the maximum system EIRP is 1142.88 mW (equivalent to 1.14288 W).

¹¹⁷ RSS-102, s. 2.5.

¹¹⁸ RSS-210, s. 1 and Annex 8.

¹¹⁹ RSS-210, s. 2.1.

¹²⁰ RSS-Gen, ss. 1.1 and 1.2.1.

RSS-102.¹²¹ As noted, those RF exposure limits are the limits found in Safety Code 6.

97. CSTS does not address Industry Canada's RSS-Gen, RSS-102 or RSS-210 in its flawed analysis of the application of Safety Code 6, despite the fact that each is expressly discussed in FortisBC's Main Submission as part of the legal framework binding the operation of the AMI meters. Nor does CSTS address the testimony of its expert witness, Dr. Maisch, who was qualified as an expert in health standards relating to exposure to electromagnetic radiation and agreed that FortisBC is bound to follow national official standards such as Safety Code 6.¹²²

98. Further, CSTS incorrectly alleges that "Safety Code 6 has not been adopted by the Province of British Columbia" (page 47). British Columbia's Workers Compensation Act Occupational Health and Safety Regulation, Part 7, applies Safety Code 6 in this Province.¹²³

99. Even if CSTS's position that Safety Code 6 does not bind FortisBC was correct, Safety Code 6 would still apply to the AMI meters because Safety Code 6 binds Itron in its import and sale of the AMI meters. FortisBC would not purchase and install AMI meters which were not compliant with all applicable laws and regulations: accordingly, compliance with Safety Code 6 was specifically identified as a key requirement in the FortisBC RFP document.¹²⁴ Section 4(3) of the *Radiocommunication Act* prohibits the import and sale of radio apparatus for which technical standards have been established under section 6(1)(a), unless the apparatus complies with those standards. As was previously noted, the preamble to the Regulations states that they are made pursuant to section 6 of the *Radiocommunication Act*. Thus RSS-102, RSS-210 and RSS-Gen apply to Itron in its import and sale of the AMI meters just as they apply to FortisBC in its operation and possession of the AMI meters.

¹²¹ RSS-Gen, s. 5.6.

¹²² Exhibit C9-8, Tab 4C – Maisch Report at p. 12.

¹²³ Exhibit B-15 – FBC's Response to WKCC IR2 11.2.

¹²⁴ Exhibit B-1 – FBC's Application at p. 55.

100. Further, even if Safety Code 6 were not binding it would be highly informative given that it is issued by Health Canada and provides limits for RF exposure at the frequencies in which the AMI meters operate. Reference to Safety Code 6 would hardly be “arbitrary”, as CSTS suggests (page 60).

(b) Other

101. On pages 9 and 18, Mr. Flynn attributes a warning to the National Research Council. Mr. Warren testified that in fact that statement is not correctly ascribed to the National Research Council. It was an independent report that was published in the National Research Council Journal, and not said by the National Research Council.¹²⁵

(3) Other National Standards

102. Mr. Flynn refers to a limit in Austria (pages 2, 8). He may be referring to a limit in Salzburg,¹²⁶ a particular region within Austria that does not have authority over matters related to limits for RF exposure.¹²⁷

103. In any event, even the Salzburg limits would be met by the proposed advanced meters. Dr. Shkolnikov noted that “Salzburg which matches Bioinitiative 2007 number, under those guidelines you would -- the Fortis AMI smart meters would actually still fall below that level.”¹²⁸ The fact that the proposed advanced meters would also meet other standards cited by Interveners is addressed in paragraph 71(c) above.

104. Mr. Flynn cites comments purportedly made by Yuri Grigoriev, whom he associates with the Russian National Committee on Non Ionizing Radiation Protection. As Dr. Shkolnikov pointed out, Dr. Grigoriev also has different associations, including with a consulting firm of which he is a member, and the capacity in which certain statements attributed to him have been made is sometimes not clear.¹²⁹ In any event,

¹²⁵ T7, p. 1289, l. 23 - p. 1290, l. 20.

¹²⁶ Exhibit C6-4 at p. 4.

¹²⁷ Exhibit C9-13-2 – Dr. Jamieson Response to FBC IR1 8.16.3.

¹²⁸ T7, p. 1281, ll. 18-21.

¹²⁹ T7, p. 1303, ll. 2-5, p. 1309, ll. 4-10 – Dr. Shkolnikov.

the fact that the proposed AMI meters would satisfy Russian national standards is addressed in paragraph 71(c) above.

(4) Resolutions and Appeals

105. Mr. Flynn includes on pages 14-15 of his submissions a list of “Resolutions” and “Appeals” related in some way to wireless technology. Dr. Bailey noted in his testimony that such documents served as a forum for the expression of opinion, but that they “are not substitutes for the kinds of assessments and all of the research that have been performed by national and international health agencies.”¹³⁰

(5) Allegations of Experimenting on Customers

106. Mr. Miles says that FortisBC “is planning to make their customer base (and myself) guinea pigs in some grand experiment through the distribution of RF emitting devices” (pages 5, 16). Mr. Shadrack, for his part, accuses FortisBC of “propos[ing] to wantonly and deliberately expose its EMF and EMR sensitive customers to electromagnetic and radio frequencies detrimental to their health...” (para. 115). These characterizations are entirely unwarranted. FortisBC has applied to the Commission for approval of a project which involves a device that meets Health Canada standards.

107. Mr. Loski squarely addressed such allegations during cross-examination¹³¹:

MR. LOSKI: A: This is the, I guess, second time I've heard this characterization of our EMI project as an experiment. The first was with Mr. Aaron talking with Dr. Bailey early last week. And Dr. Bailey stated that in his view that isn't how he would characterize our project. And I had certainly hoped that that would be the last time I would hear that at this hearing.

I take great offense with that characterization of what we're doing here. What we're doing, as you know, is a project to implement advanced meters across our service territory. These wireless advanced meters, we believe, serves the public interest.

I have also stated early last week that the implementation of wireless meters in the utility business is commonplace throughout North America. I

¹³⁰ T7, p. 1281, ll. 2-16 – Dr. Bailey.

¹³¹ T7, p. 1262, l. 2 – p. 1263, l. 3

mentioned a figure that I believe was about 160 million utility meters that are wireless. And, you know, this is normal course. As I've said, the -- what we're proposing here meets all applicable legal frameworks within Canada, and is in compliance with the Safety Code 6 standards, and, as I said, serves the public interest.

These characterizations and bald assertions that are being thrown out here are not helpful, and I believe are not something that should be thrown about in a Commission hearing, respectfully, Mr. Chair.

(6) Particular Health Conditions

(a) Cancer

(i) Whether RF Emissions Are a “Factor”

108. CSTS asserts that “Dr. Bailey admits that RF emissions, such as those from the proposed AMI meters, are a factor in cancer” (pages 5, 48). This is a complete mischaracterization. Dr. Bailey’s testimony related to factors for further investigation or consideration, and clearly do not suggest – contrary to CSTS’ implication - that a causal relationship has been established¹³²:

DR. BAILEY: A: Well, I think, for example, the fact that a statistical association has been reported between the usage of mobile phones and certain types of cancer, which was recognized in the IARC review, would be an example that that level of exposure was something that had -- the presence of that association, although not determined to be causal, is something that suggested this is a factor to be considered in doing further work to determine if the relationship is causal.

MR. AARON: Q: Would you also say it’s a factor to be considered in health and disease, to use the language on page 7?

DR. BAILEY: A: Yes, I would say so.

MR. AARON: Q: So then the type of emissions that arise from AMI meters are a factor to be considered in health and disease, one of which is cancer.

DR. BAILEY: A: Yes. [underlining added]

109. The “language on page 7”, which is referred to in the exchange above, is simply that “While this information from an epidemiological study may provide an indication as

¹³² T5, p. 908, ll. 1-18.

to the factors involved in health and disease, neither a statistical association nor a correlation between the two things is a direct indication of cause and effect."¹³³

(ii) Other Substances in IARC's 2B Category

110. Mr. Atamanenko refers to lead and DDT as other substances in IARC's 2B category, implying that RF emissions should be viewed with similar concern. However, lead and DDT are linked to serious health issues other than cancer; the evidence of their carcinogenicity, specifically, is limited, and that is the reason for the Group 2B classification.

111. The Exponent Report properly puts matters in context, as follows:

Following the methods in their preamble, the rating "limited evidence" caused the IARC to include RF exposure in their Category 2B "possible carcinogen." The IARC's categories err on the side of caution; only 1 out of 927 substances has been classified as "probably not a carcinogen." The vast majority of substances are classified as "possible carcinogens" or "not classifiable," leaving 107 "known carcinogens" and 58 "probable carcinogens." The category "possibly carcinogenic to humans" denotes exposures for which there is limited evidence of carcinogenicity in epidemiology studies and less than sufficient evidence of carcinogenicity in studies of experimental animals and include such things as occupation as a firefighter, pickled vegetables, and coffee.¹³⁴ [underlining added]

112. Health Canada scientist James McNamee testified to the same effect in *Chateauguay v. Rogers*, after stating that he was part of the IARC expert committee which recommended the Group 2B classification:

This classification is meant to reflect there is some evidence, from human studies and from animal studies, that could be used to formulate a decision of carcinogenicity. But it's also an acknowledgement that there's a much greater... or there's a large number of other evidence that doesn't support that. So, essentially, Class 2B is a category for additional study. It means there is evidence, it doesn't necessarily mean the evidence is strong or causal. Most agents that are studied by this group end up in Class 2B.¹³⁵ [underlining added, ellipses in original]

¹³³ T5, p. 905, ll. 4-15.

¹³⁴ Exhibit B-1 – FBC's Application, Appendix C-5 at p. 14 of 47.

¹³⁵ Exhibit B-46 at pp. 12-13.

(iii) Impact of IARC 2B Classification on Safety Code 6

113. CSTS and Mr. Atamanenko point to IARC's classification of RF EMF in its Group 2B. Health Canada is well aware of the classification. Health Canada's Dr. McNamee served on the expert panel which decided on that classification. He has indicated that Health Canada reviewed much of the literature reviewed by IARC's expert panel, but the publication of the Group 2B classification decision did not change Health Canada's position on that literature.¹³⁶

114. Nothing about the Group 2B classification is inconsistent with the limits set out in Safety Code 6. Exponent described the implications of the IARC working group's classification as follows, as in part quoted above:

The Working Group concluded that there was "limited evidence" in epidemiology studies, based on positive associations between use of wireless phones and a type of brain cancer. They also rated experimental studies of animals for carcinogenicity of RF exposure as "limited evidence." Data is rated "limited evidence" in epidemiology studies if a positive association between an exposure and cancer is found, although factors such as chance, bias, and confounding cannot be ruled out with reasonable confidence. Following the methods in their preamble, the rating "limited evidence" caused the IARC to include RF exposure in their Category 2B "possible carcinogen." The IARC's categories err on the side of caution; only 1 out of 927 substances has been classified as "probably not a carcinogen." The vast majority of substances are classified as "possible carcinogens" or "not classifiable," leaving 107 "known carcinogens" and 58 "probable carcinogens." The category "possibly carcinogenic to humans" denotes exposure for which there is limited evidence of carcinogenicity in epidemiology studies and less than sufficient evidence of carcinogenicity in studies of experimental animals and include such things as occupation as a firefighter, pickled vegetables, and coffee. Moreover, the IARC statement was based on the review of studies involving mobile phones and RF exposure, which is a much greater than the exposure from advanced meters. The IARC report, however, does not comment on the level of exposure.¹³⁷
[underlining added, citations omitted]

115. Further, the British Columbia Ministry of Health in its Smart Meter and Cancer Risk Statement has noted:

¹³⁶ Exhibit B-46 at pp. 12-14.

¹³⁷ Exhibit B-1 – FBC's Application, Appendix C-5 at p. 14 of 47.

Following the publication of the Interphone study, a report summarizing the IARC Working Group review (The Lancet Oncology, July 2011) concluded that the Interphone results, “along with those from other epidemiological, biological, and animal studies, and brain tumour incidence trends, suggest that within the first 10-15 years of exposure to RF radiation from cell phones, the period of use examined in Interphone, there is unlikely to be a material increase in brain tumours in adults”. The report also concluded that, “although there remains some uncertainty, the trend in the accumulating evidence was increasingly against the hypothesis that (RF radiation from) mobile phone use can cause brain tumours in adults.”¹³⁸ [underlining added]

116. Mr. Atamanenko argues that the level of exposure from AMI meters is not relevant and that any level of RF EMF in the 30 kHz to 300 GHz frequencies falls under the Group 2B category (pages 2 to 3). However, the Provincial Health Officer, Vancouver Coastal Health’s Chief Medical Health Officer and the Medical Health Officer for Richmond have commented specifically on the basis for the IARC classification:

Regarding cancer risk, the recent decision by the WHO to classify radio frequency electromagnetic field as possibly carcinogenic (Class 2B) is based on epidemiological uncertainties surrounding the long term and heavy use of cell phones held to the ear. This is clearly not the case with respect to exposure from Smart Meters or the collectors.¹³⁹

117. The Staff of the Michigan Public Service Commission in a report to that Commission stated that:

Low exposure levels from smart meters coupled with the fact that the IARC’s classification is based on weak mechanistic evidence and limited evidence derived from different RF EMF emitting devices is important to consider when evaluating the substance of the group 2B classification.¹⁴⁰

(iv) Interphone Study

118. On page 1 of its submissions, CSTS cites the Interphone study for a correlation between RF exposure and brain cancer “in the group of heaviest usage time”.

¹³⁸ Exhibit B-15-1 – Attachment BCH 2.5 at p. 2.

¹³⁹ Exhibit B-15-1 – Attachment BCH 2.3 at p. 3. See also the Statement of the Chief Medical Health Officer at Exhibit B-15-1 – Attachment BCH 2.1 at p. 9.

¹⁴⁰ Exhibit B-15-1 – Attachment BCH IR2 2.8 at p. 12.

119. However, as Dr. Bailey testified, even as to cell phones the Interphone study provided “grist for everyone’s mill”.¹⁴¹ Dr. Bailey noted that¹⁴²:

What you have in the Interphone study is that you have, for most all of the analyses, there is either no difference in the estimated exposure of these two groups of people, and actually for a number of the analyses, the exposure of the cases is – the odds of the cases were exposed is less than that of the controls.

120. Further, as to heaviest use, Dr. Bailey noted¹⁴³:

So in this study when you look in that particular metric for assessing exposure, which is a person’s recall of how many hours of use they had of the cell phone, you found this association. On the other hand, when you looked at other ways of estimating exposure based upon whether they had ever had a cell phone or never had a cell phone, or how long they had been using a cell phone, or the cumulative number of calls, there was not a statistically significant positive association.

(b) EHS

121. While various Interveners make lengthy submissions on EHS, as was set out in the Main Submission EHS is not a medical diagnosis, and no scientific basis exists to link EHS symptoms to exposure to EMF.¹⁴⁴ No scientific or health agencies have recognized a causal relationship between exposure to EMF and EHS symptoms.¹⁴⁵ This point has also been conceded by several of the expert witnesses of the Interveners.¹⁴⁶

122. Mr. Shadrack in cross-examination, and also at paragraph 102 of his submission, sought to tie the EHS-related activities of AAEM physicians with WHO. Mr. Loski pointed out immediately after the passage quoted at Mr. Shadrack’s paragraph 102¹⁴⁷:

¹⁴¹ T3, p. 537, ll. 15-16 – Dr. Bailey.

¹⁴² T3, p. 539, ll. 1-7 – Dr. Bailey.

¹⁴³ T3, p. 540, ll. 4-13 – Dr. Bailey.

¹⁴⁴ See Main Submission at pp. 175-176.

¹⁴⁵ See Main Submission at pp. 181 and 199.

¹⁴⁶ Dr. Carpenter, Main Submission at para. 518; Dr. Sears, Main Submission at para. 573.

¹⁴⁷ T6, p. 1084, ll. 16-24.

MR. LOSKI: A: If I could add, Mr. Shadrach [sic], certainly from our perspective going to the WHO document that you just referenced, in that same subheading under “Physicians”, in the first paragraph it states that:

“Treatment of affected individuals should focus on the health symptoms in the clinical picture and not on the person’s perceived need for reducing or eliminating EMF in the workplace or home.”

123. Mr. Shadrack accuses FortisBC of in effect taking the position that “no precautionary principle should be used in dealing with customer concerns” (para. 122). Mr. Warren set out a useful perspective on this in responding to the Commission Panel’s questions¹⁴⁸:

MR. WARREN: A: I don't know whether this amplification may be helpful or not, but the way I've thought about it is, I now understand there is a wide range of interpretations of what "precautionary principle" means. I know Health Canada applies a safety factor of 50 times when they set the limit. They took the limit at which the adverse effects are known, reduced that by 50 times -- arguably, precautionary.

But we know that other agencies throughout the world have taken different views on this, and some more conservative. And I suppose those could be characterized as precautionary as well. The approach is taken in other jurisdictions where they've set limits much lower. And I think we've heard that regardless of which national or international standard you pick, including some that are arguably based on a more precautionary principle, we are in compliance.

124. Further, FortisBC denies Mr. Shadrack’s assertion that it has proposed “no accommodation” for individuals that allegedly suffer from EHS (at para. 119). FortisBC has indicated that it intends to provide customers with an option, at their own expense, to relocate their AMI meter away from their residence to further minimize any exposure to EMF.¹⁴⁹

¹⁴⁸ T7, p. 1426, l. 15 – p. 1427, l. 5.

¹⁴⁹ Exhibit B-1 – FBC’s Application at pp. 134 and 142.

(c) Pacemakers

125. Mr. Shadrack suggests that devices such as pacemakers may be affected by EMF or RF exposure. Dr. Shkolnikov gave evidence on pacemakers and other implants¹⁵⁰:

... And usually if you look at inserts for different medical devices, they will tell you what is a minimum recommended distance. And typically the number they cite is roughly six inches...

So I would say, you know, people need to be prudent and follow their instructions from their medical device manufacturer. If they are concerned they should talk to the doctor. But this device doesn't produce anything unusual that wouldn't be experienced by a person who has a cordless phone or a cell phone or a WiFi router. It's similar issues. There's not – with the only difference is that these devices will typically be installed at a substantial distance from your body, so that effectively reduces the likelihood of interference.

(d) Weight

126. CSTS suggests that “Dr. Bailey agreed that [a] study reported the weight gain to have been caused by the exposure” (page 14 of CSTS submissions). Dr. Bailey noted, among other things, that “[i]t's a common observation in these laboratory studies to have variations in weight gain” and noted that further investigation had not been done in that study.¹⁵¹

(7) Brain Chemistry

127. CSTS says at paragraph 13 of its submissions that “Dr. Blank's Report at page 2 refers to leakage of the blood-brain barrier that causes contamination of the fluid that protects the brain and results in the death of nerve cells”. However, neither AGNIR nor ICNIRP found such evidence to be persuasive. After reviewing various findings and studies, the authors of the AGNIR report concluded¹⁵²:

The majority of recent studies investigating effects on the blood-brain barrier have reported robustly negative results. Importantly, the

¹⁵⁰ T7, p. 1375, ll. 1-20 – Dr. Shkolnikov.

¹⁵¹ T5, p. 862, l. 10 – p. 863, l. 5.

¹⁵² Exhibit B-42 – AGNIR Report, p. 136.

observations of Salford and colleagues could not be confirmed by three independent research groups, and the positive results have been largely attributed to technical shortcomings and the presence of artefacts. Overall, the evidence for low level effects on the blood-brain barrier has grown substantially weaker since 2003, and it now seems far less likely that low level fields are capable of causing detrimental changes.

128. The authors of the ICNIRP report stated, after also reviewing studies on the blood brain barrier¹⁵³:

Overall, earlier reports of increased blood-brain barrier permeability have not been corroborated by later, better conducted studies.

(8) Distinction Between Effects and Adverse Effects

129. On page 5 of his submissions, Mr. Miles states that Dr. Bailey's agreement that modulation patterns can have an effect in living systems means that there is risk from RF exposure. This is a false equivalence; an effect does not equal a risk. Dr. Bailey testified that potential health risks are assessed by studying exposure at different levels and looking at human and animal responses. In such an analysis, harmless bio-effects such as the dilation of one's pupil in response to light must be differentiated from truly adverse health effects.¹⁵⁴

130. Further, it has not been shown that the specific modulation pattern of AMI meters has an adverse effect on living systems. The Health Council of the Netherlands in its critique of the BioInitiative Report considers that there was not sufficient scientific evidence to confirm that some experimental studies had found indications that certain biological effects may occur upon exposure to a modulated signal but not (or to a lesser extent) with exposure to an unmodulated signal, and that it was not known whether such effects may lead to health effects.¹⁵⁵ The IEEE indicates that no modulation-dependent or modulation-specific effects have been substantiated.¹⁵⁶

¹⁵³ Exhibit B-15-1 – Appendix BCH IR2 2.13 – ICNIRP Report, p. 184.

¹⁵⁴ T3, p. 429, l. 16 – p. 430, l. 6 – Dr. Bailey.

¹⁵⁵ Exhibit B-15-1 – Attachment BCH 4.1.

¹⁵⁶ Exhibit B-15-1 – Attachment BCH IR2 2.12 at p. 97.

131. CSTS also focuses on bio-effects rather than adverse health effects, including the following:

- (a) RF exposure at low levels can allegedly cause temperature increases. Dr. Shkolnikov noted that the amount of temperature increase being discussed was very small, perhaps one-fiftieth of one degree for exposure at the Safety Code 6 limit. Because exposure from AMI meters would be ten thousand times below that limit (measured with the mean duty cycle at a distance of 0.5m)¹⁵⁷, the heating would be ten thousand times less as well. These temperature fluctuations are, in Dr. Shkolnikov's words, "substantially much lower than the normal fluctuation of temperature both in the environment and your human body, to a point of basically being immeasurable using even advanced instruments."¹⁵⁸
- (b) RF exposure is alleged to cause brain chemistry effects. As was made clear in CSTS's cross-examination of Dr. Bailey on this subject, the evidence of such effects is that certain changes in animals may be induced by relatively intense RF exposure, but the evidence of any functional consequence for performance of behavioural tasks is equivocal.¹⁵⁹

(9) Allegations of Dishonesty

132. Mr. Flynn repeatedly suggests that FortisBC or its witnesses are lying in respect of health or other issues (pages 1, 4). Certain other Interveners essentially make the same suggestion – for example, Mr. Shadrack suggests that Exponent has not provided "an honest assessment of the range of positive and negative reviews of the Hardell team's work" (para. 76), and Mr. Miles refers to "deceptive" rationales (page 2). There

¹⁵⁷ Exhibit B-1 – FBC's Application, Appendix C-5 at p. A-2.

¹⁵⁸ T4, p. 592, l. 9 – p. 593, l. 18 – Dr. Shkolnikov.

¹⁵⁹ T4, p. 622, l. 5 – p. 624, l. 13 – Dr. Bailey; Exhibit B-15-1 – Appendix BCH IR2 2.13, ICNIRP report at p. 259.

is absolutely no basis for these suggestions. Indeed, to the contrary, CEC suggests that FortisBC has not advanced its case about the AMI Project vigorously enough.

133. FortisBC's Application was subject to three rounds of information requests, and the FortisBC witness panels were subjected to extended cross-examination. The evidence has been tested and while Interveners may disagree with the conclusions drawn, this does not warrant any suggestion that the evidence was proffered other than professionally, honestly and in good faith.

(10) Particular Criticisms of Exponent

(a) Dr. Erdreich

134. CSTS submits that the Commission should draw an adverse inference from Dr. Erdreich's unavailability for cross-examination. No such inference is necessary or appropriate in the circumstances: both Dr. Bailey and Dr. Shkolnikov were called for extensive cross-examination as to the contents of the Exponent Report; FortisBC answered extensive IRs from multiple Interveners on the contents of the Exponent Report; and counsel for FortisBC explained that Dr. Erdreich was unavailable as she was in Israel attending to family matters.¹⁶⁰

135. Sopinka, Lederman & Bryant set out the law regarding adverse inferences as follows:

In civil cases, an unfavourable inference can be drawn when, in the absence of an explanation, a party litigant does not testify, or fails to provide affidavit evidence on an application, or fails to call a witness who would have knowledge of the facts and would be assumed to be willing to assist that party. In the same vein, an adverse inference may be drawn against a party who does not call a material witness over whom he or she has exclusive control and does not explain it away. Such failure amounts to an implied admission that the evidence of the absent witness would be contrary to the party's case, or at least would not support it.¹⁶¹

¹⁶⁰ T2, p. 142, ll. 4-7; T2, p. 145, l. 24 – p. 146, l. 1 – Mr. Macintosh.

¹⁶¹ Alan W. Bryant, Sidney N. Lederman and Michelle K. Fuerst, eds., *Sopinka, Lederman & Bryant: The Law of Evidence in Canada*, 3rd ed. (Markham, Ontario: LexisNexis Canada, 2009) at 377.

136. The British Columbia Court of Appeal stated in *Buksh v. Miles*, 2008 BCCA 318, at para. 30:

The notion of adverse inference is related to the best evidence rule. The observation in Wigmore's *Evidence in Trials at Common Law*, Chadbourne Rev. (Toronto & Boston: Little Brown & Company: 1979) vol. II, §287, at 202-3, offers valuable guidance:

Furthermore, it seems plain that possible witnesses whose testimony would be for any reason comparatively *unimportant*, or *cumulative*, or *inferior* to what is already utilized, might well be dispensed with by a party on general grounds of expense and inconvenience, without any apprehension as to the tenor of their testimony. In other words, put somewhat more strongly, there is a general limitation (depending for its application on the facts of each case) that the inference cannot fairly be drawn except from the non-production of witnesses whose testimony would be *superior* in respect to the fact to be proved.¹⁶²

137. Dr. Erdreich's testimony would be of no further assistance to the Commission given the testimony of Dr. Bailey and Dr. Shkolnikov. Further, Dr. Bailey's evidence is superior to that of Dr. Erdreich in that he directed and supervised the Exponent Report. As Dr. Bailey described, he was the project director and involved in pulling together the information for the Exponent Report. He requested two of his colleagues, Dr. Shkolnikov and Dr. Erdreich, to provide input to that report. The work was entirely undertaken under Dr. Bailey's direction and supervision.¹⁶³

138. CSTS says that prior to FortisBC's February 20, 2013 letter setting out its witness panels, FortisBC "had not provided any notice that it would not be calling Dr. Erdreich as a witness or otherwise making her available for cross-examination", or that it intended to rely on the Exponent Report "as a written statement of an expert opinion in satisfaction of sections 10 and 11 of the *Evidence Act*" (page 15). However, counsel for FortisBC stated at the procedural conference on November 8, 2012¹⁶⁴:

¹⁶² Mary T. Ainslie, *et al.*, eds., *Introducing Evidence at Trial: A British Columbia Handbook*, 2d ed. (Vancouver: Continuing Legal Education Society of British Columbia, 2013) at 50-51.

¹⁶³ T3, p. 402, ll. 9-22.

¹⁶⁴ T1, p. 71, ll. 1-21. In its footnote 14, CSTS refers to an alleged "failure to make a commitment in that regard in answering CSTS IR#1, questions 23.1, 23.2 & 23.3". Those questions asked about the authors of the report, their qualifications and whether they were being "held out as experts in a field". If

All right. So, I can advise what the present anticipation is of FortisBC in terms of expert evidence, and that's primarily as Mr. Aaron identified, there is a report by a company called Exponent, which is included in the FortisBC application at Appendix C. And what we anticipate is that one of the authors of that report, a Dr. Bailey, will be called to testify at the oral hearing. As the exponent report reflects, there is a fair number of -- there are a fair number of standards already in place, so part of the evidence will deal with that, and part of the remainder of the report. It may be that a panel including Dr. Bailey will have a representative of FortisBC on it as well, but that's certainly the primary intent at this stage in terms of the health issue from FortisBC's point of view.

I should note as well, supplementing that in the application there is Health Canada safety code 6 and so on. So, of course we're relying on the existing material and responses to IRs, but that's the present plan.

139. Later in the transcript, the following exchange occurred¹⁶⁵:

MR. AARON: Would you might just summarize that in terms of -- there was a reference to a doctor or the -- the authors of the Exponent report.

MR. FULTON: Yes. I believe that the transcript will show that Ms. Herbst referred to Dr. Bailey as being a person who would appear on a panel, perhaps with a Fortis witness as well. And that at this point at least and subject to what is the outcome of any expert evidence that is filed on the date for intervener evidence that is chosen by the Commission Panel following this procedural conference, FortisBC is relying on the Exponent report and the responses to the IRs and any other evidence that has been filed to date by Fortis in the proceedings.

MR. AARON: Okay. Is Dr. Bailey the author of Exponent report?

MS. HERBST: He is one of the authors of the Exponent report, yes.

140. CSTS suggests that "FortisBC *could* have made Dr. Erdreich available for cross-examination" (page 15). As explained above, Dr. Erdreich was not available -- she could not have been "made" so. Further, even if she had been available though geographically distant, CSTS' correspondence raising a preliminary motion would not in any way have signalled that Dr. Erdreich's presence or absence was in issue. CSTS wrote in its correspondence of February 25, 2013¹⁶⁶:

intended to elicit a reference to the *Evidence Act*, this was certainly not evident from the questions themselves.

¹⁶⁵ T1, p. 72, ll. 7-25.

¹⁶⁶ Exhibit C9-15.

The preliminary matter that CSTS intends to raise at hearing is as follows. No expert opinion report has been tendered by FortisBC in relation to the testimony of any expert enumerated in FortisBC's correspondence of February 20, 2013. There has been no compliance by FortisBC with sections 10 or 11 of the *Evidence Act* [RSBC 1996] Ch. 124 in that regard. As such, FortisBC's witnesses should be prohibited from providing any testimony in the nature of opinion evidence, whether in chief or in response to questions posed by participants or the hearing panel.

(b) Dr. Bailey

(i) Alleged Lack of "Medical Expertise"

141. CSTS alleges that "FortisBC did not tender a witness that...could...claim medical expertise" (page 16) and Mr. Miles refers to the "absence of a medical expert on the FBC health witness panel" (page 5). This is not correct. At the hearing, CSTS sought to "carve out an exception to [Dr. Bailey's] expertise, in that he's not, in my submission, a medical expert. He has no expertise in medicine, in biological functions".¹⁶⁷ Mr. Shadrack joined in and sought to extend the carve out more broadly.¹⁶⁸ The Commission rejected the proposed carve outs, holding as follows¹⁶⁹:

Mr. Aaron's request was to add a *caveat* to the scope of Dr. Bailey's expertise as not being a medical doctor and not an expert in biological function. Mr. Shadrack supported this position.

The Commission panel denies this request to narrow the scope of Dr. Bailey's expertise. The panel made its decision having considered the Supreme Court of Canada's criteria in *R. v. Mohan*, specifically that evidence must be given by a witness who has shown to have acquired special or peculiar knowledge through study or experience in respect of the matters on which he undertakes to testify.

The Panel notes the considerable training and experience of Drs. Bailey and Shkolnikov in the fields for which they are tendered to give expert opinion evidence. The Panel is satisfied that both witnesses are sufficiently experienced in the subject matter at issue.

In arriving at its ultimate decision on the Fortis AMI application, the Panel will determine which evidence should receive the greatest weight....

¹⁶⁷ T3, p. 435, ll. 6-15, p. 437, ll. 8-10.

¹⁶⁸ T3, p. 438, l. 24 – p. 439, l. 5.

¹⁶⁹ T3, p. 450, ll. 1-21.

142. Mr. Shadrack complains that Dr. Bailey “rarely, if ever, expressed the limits to his expertise” (paras. 81, 108). However, the limitations that Mr. Shadrack sought to have acknowledged, as noted above, were rejected.

143. Among the aspects of medical-related background about which Dr. Bailey testified were the following:

- (a) he has 30 years of training and experience that include laboratory and epidemiologic research, health risk assessments and comprehensive exposure analysis;¹⁷⁰
- (b) while he does not have a degree in epidemiology, his training has been in the tools that are used by epidemiologists and he has designed and carried out epidemiological studies;¹⁷¹
- (c) he received a Ph.D. in neuropsychology, which is also referred to as neurobiology, and involves research with application to health problems.¹⁷² (Dr. Bailey’s doctorate is not, as CSTS asserts on page 16, in “psychology”);
- (d) he had also earlier taken courses in the medical school and worked in laboratories including biological research laboratories at Michael Reese Hospital and the Illinois State Psychiatric Institute;¹⁷³
- (e) he was awarded a two-year post-doctoral fellowship by the National Institute of Health to take advanced training in neurochemistry, which he did;¹⁷⁴
- (f) he is part of the Medicine and Biology Society (whose interest or focus is, as its name indicates, medicine and biology) within the IEEE

¹⁷⁰ T3, p. 378, ll. 13-18.

¹⁷¹ T3, p. 424, ll. 1-4 – Dr. Bailey.

¹⁷² T3, p. 382, l. 13 – p. 383, l. 5.

¹⁷³ T3, p. 383, ll. 20-26.

Subcommittee for Safety Levels with Respect to Human Exposure to Radiofrequency Fields, 3 kHz to 3 GHz;¹⁷⁵

- (g) he has authored numerous health-related publications and made numerous health-related presentations;¹⁷⁶
- (h) since 1986 he has been a Visiting Fellow, Department of Pharmacology, Cornell University Medical College;¹⁷⁷
- (i) he was the Head of the Laboratory of Neuropharmacology and Environmental Toxicology at the Institute for Basic Research in Developmental Disabilities;¹⁷⁸
- (j) he has lectured at the University of Texas Health Sciences Centre and the Harvard School of Public Health, among others.¹⁷⁹

144. There was no objection made during Dr. Bailey's testimony suggesting that any answers he provided exceeded that expertise. Further, as CEC notes in its submissions, the Exponent witnesses were candid in qualifying their answers as necessary; indeed CSTS cites and relies on many instances in which this was done.

145. Further, while Mr. Shadrack repeatedly contrasts Dr. Bailey and Dr. Sears (suggesting that Dr. Sears should be viewed more favourably), she is also not a medical doctor and does not have clinical experience.¹⁸⁰ While on page 16 of its submission CSTS further points to Dr. Blank's medical expertise, he is also not a medical doctor.¹⁸¹

146. Mr. Shadrack does not fairly characterize Dr. Bailey's evidence when he states that Dr. Bailey could not accept that an oncologist might have specialist knowledge that

¹⁷⁴ T3, p. 384, ll. 2-11.

¹⁷⁵ T3, p. 384, l. 15 – p. 385, l. 26.

¹⁷⁶ T3, p. 386, l. 1 – p. 393, l. 14.

¹⁷⁷ T3, p. 393, l. 17 – p. 394, l. 9.

¹⁷⁸ T3, p. 394, ll. 10-25.

¹⁷⁹ T3, p. 395, ll. 4-9.

¹⁸⁰ Exhibit C9-12 – Dr. Sears Response to FBC IR1 7.5.3.

¹⁸¹ Exhibit C9-8, Tab 1F.

an epidemiologist might not have (para. 81). Dr. Bailey stated that oncologists have expertise in treating patients or evaluating genetic characteristics of tumours or of the histopathology of tumours, but were arguably not the right group to evaluate Dr. Hardell's research because most oncologists are not involved in conducting and evaluating epidemiology studies."¹⁸²

147. Further, the authors of the legal text *The New Wigmore: Expert Evidence* caution against the assumption that physicians are experts in causation of harm from exposure:

Courts often assume that because a clinician has examined a plaintiff, that clinician has special insight into the cause of the plaintiff's injuries, or that all physicians are experts in determining the relationship between particular toxins and disease. Physicians are trained to diagnose and treat medical problems, not to present an expert opinion on *causation* of injury from exposure to drugs or toxic chemicals.¹⁸³ [italics in original, citations omitted]

(ii) Alleged Failure to Address Certain Matters

148. CSTS criticizes the Exponent Report for not addressing the BioInitiative Report. Notably, despite criticizing Exponent for not dealing with the BioInitiative Report, CSTS did not file either the 2007 or 2012 versions of that Report. No other Interveners did so either.

149. Both Dr. Bailey and Dr. Shkolnikov addressed the BioInitiative Report in their testimony. Dr. Shkolnikov's observations as to the BioInitiative Report 2012 underline reasons to be concerned about its practicality and accuracy. As he testified¹⁸⁴:

...Bioinitiative 2012, if you read through it, basically states that all the technology in the world right now would basically exceed those limits. And moreover, because they define it a response from 3 kilohertz to 300 gigahertz, your own body, by putting your hand up to your head, would actually exceed the limit.

So would a cell phone used in this room exceed the limit in the intervener's room? So that limit would actually ban all natural and

¹⁸² T6, p. 1106, ll. 6-17 – Dr. Bailey.

¹⁸³ David H. Kaye, David E. Bernstein and Jennifer L. Mnookin, *The New Wigmore: Expert Evidence*, 2d ed. (New York: Aspen Publishers, 2010) at p. 123.

¹⁸⁴ T7, p. 1265, l. 19 – p. 1266, l. 6.

manmade sources of radio frequency signal -- or I would say almost, with possible exception of the smart meters that are proposed for the Fortis advanced meter infrastructure.

150. In questioning by Mr. Andrews, Dr. Bailey also addressed the Bioinitiative report:

DR. BAILEY: A: Our assessment, like those of reviews of the literature done by World Health Organization and other agencies, are focused on scientific reviews and documents that are helpful and useful and provide accurate and balanced information.

The Bioinitiative report is a collection of chapters that were pulled together by an *ad hoc* group of scientists, and in some cases non-scientists, who published their opinions on a document on the internet. And over the years, a number of different scientists and health agencies have criticized the scientific quality of the Bioinitiative report. And so this is not the kind of document that one would want to go to for totally unbiased and accurate representations of the scientific literature.

So, for example, a very important aspect of assessing potential health risks regarding cancer involves -- since cancer is a process that develops over a long period of time, generally, we look to exposures for long periods of time and in the literature there are multiple studies of animals that have been exposed over their entire lifetime to radio frequency fields.

When I went to look at the Bioinitiative report, there is almost no reference to these types of studies in the report. So the recent 2012 review that was done by the Health Protection Agency cites five such bio-essay studies, of which I could only find one in the 2012 Bioinitiative report cited.

151. CSTS also variously suggests that the Exponent Report looked too much at Safety Code 6. However, CSTS itself includes in its submissions a passage from Dr. Bailey's testimony, where, when asked about whether there might be adverse bio-effects at the non-thermal level, he testified: "We considered that and other scientific health agencies have considered that" (page 18; underlining added). Further, Dr. Bailey has not simply, as CSTS suggests, accepted Safety Code 6. As he noted¹⁸⁵:

DR. BAILEY: A: I have reviewed and assessed the scientific literature and my assessment of that literature, and the reviews that I pointed the readers of our report to, do not indicate that the allegations against Safety Code 6 are supported by the scientific evidence.

¹⁸⁵ T4, p. 698, ll. 8-13 – Dr. Bailey.

152. CEC suggests that the Exponent Report could have included express discussion of *in vitro* studies (para. 207). Dr. Bailey indicated that the most reliable way to establish potential harm or measure harm to human health is through studies of animals and epidemiology studies. Once an effect is established in such a study, then it is helpful to turn to *in vitro* studies to investigate potential mechanisms.¹⁸⁶ CSTS experts Dr. Maisch and Dr. Carpenter both agree that human studies (and, in the case of Dr. Maisch, animal studies) are more relevant to the question of adverse health effects of RF on humans.¹⁸⁷

153. WKCC claims that Dr. Bailey admitted the Exponent Report left out critical bio-electromagnetic information related to health and frequency interactions (p. 4). The passage cited by WKCC makes clear that Dr. Bailey did no such thing:

Mr. Bennett: Q: Does each cell generate its own electricity?

Dr. Bailey: A: It maintains – cells maintain electrical potential between the inside and the outside of the cell. That’s what I referred to.

Mr. Bennett: Q: Yeah. Do they have their own frequencies? How many frequencies associated with a human organism? The body – from the whole entire body, how many frequencies?

Dr. Bailey: A: I don’t know that there is – that’s ever been collected in one place.

Mr. Bennett: Q: The brain, and then what’s the frequency of a brain?

Dr. Bailey: A: The frequency that you can record from the human brain, as we did in the laboratory, could be in the range from a DC field all the way up into, you know, hundreds of hertz.

Mr. Bennett: Q: Hundreds of hertz. And where I’m going now with this is, you know, your report – did you – well, does your report, the Exponent Report, refer to the number of frequencies in electricity in each cell?

Dr. Bailey: A: No. We referred to the frequencies of the system that was impinging upon the body.

Mr. Bennett: Q: The frequencies of the system. You negated [sic] to consider the interaction with a living human being.

¹⁸⁶ T3, p. 518, l. 15 – p. 519, l. 19 – Dr. Bailey.

¹⁸⁷ T8, p. 1530, l. 24 – p. 1531, l. 18 – Dr. Maisch; T11, p. 2124, l. 22 – p. 2125, l. 22 – Dr. Carpenter.

Dr. Bailey: A: No, sir, we did not.

Mr. Bennett: Q: Well, where is your electrical information? How is – how can you leave out the electrical information related to a human organism? And just refer to heat? Oh, there appears to be a heat effect.

Dr. Bailey: A: We did not leave it out of our consideration in assessing the Itron smart meters.

Mr. Bennett: Q: You didn't leave it out?

Dr. Bailey: A: We did not leave it out, because, as is well known in the scientific and engineering communities, the interactions of oscillating fields with the body, including the nervous system, the induction of voltages and currents is a property which is largely confined to frequencies below 10 megahertz and particularly below 100 kilohertz. In the ELF range, for instance, as you talk about your diagram here, where the induction of the – of potentials in the body if sufficiently high, might be able to perturb that membrane potential of the nerve cell, and for instance cause it to fire.

So we know that the application of electricity, either directly to tissues or by sufficiently high 60 hertz EMF fields can trigger nerve cells to fire, and this is used – you can demonstrate this, as we've done many times in the laboratory, or you can – a neurologist will use this as a basis for testing the response of nerves to determine whether they have been injured or not. So it's a very well-known phenomenon.

But at higher frequencies in the radio frequency range, these effects are not observed at the lowest level, but rather the heating effect of tissue is observed as the response.

Mr. Bennett: Q: Can I just – I just wanted to know where in your report you incorporated the electrical properties, everything electrical related to a human organism in order to talk about a frequency interaction which is an electrical interaction with something electrical. Something very basic and if I can say this, is –

The Chairperson: No, no, just ask the question.

Mr. Bennett: Q: Where is that in your report?

Dr. Bailey: A: I answered that question already, sir.

Mr. Bennett: Q: It's not in the report?

Dr. Bailey: A: I did not go into a description of the electrical properties of the human body and include it in the report.¹⁸⁸ [underlining added]

¹⁸⁸ T6, p. 1141, l. 5 – p. 1144, l. 2 – Dr. Bailey.

154. Mr. Shadrack criticizes Dr. Bailey as being biased for apparently suggesting that there is “unanimity and/or consensus” in the opinion of the scientific community, while the CSTS expert witnesses have demonstrated “that was not the case” (at paras. 83 and 90). This criticism is unfounded. A review of the Exponent Report reveals that Dr. Bailey has clearly acknowledged that there are differing opinions and that studies regarding RF have reached differing results. For example, the Exponent Report states that “Some studies have reported effects occurring with RF exposures below the level that raises body temperature, often called non-thermal effects”.¹⁸⁹

155. By questioning the results of these studies, Dr. Bailey hardly suggests that there is consensus in opinions. As Mr. Shadrack acknowledges, “Expert opinion must offer the full range of possibilities and probabilities and carefully explain why a certain outcome is likely, or unlikely, given all the variables that come into play” (at para. 90). This is exactly what Dr. Bailey has done.

(iii) “Weight of Evidence” Approach

156. CSTS attacks the weight of evidence approach used by Health Canada and other organisations, such as ICNIRP, to assess the relevant scientific literature. Its two specific complaints are that the weight of evidence process involves the exercise of subjective judgment, and that the weight of evidence process occurs “behind closed doors” without published explanation of the analysis underlying its conclusions. Neither criticism is well-founded.

157. First, for clarity, an explanation of how Health Canada applies the weight of evidence approach is helpful. Dr. McNamee of Health Canada testified before the Québec Superior Court as follows:

A. In a weight of evidence approach, you’re not taking one single study on a single health effect and using that as evidence to derive exposure limits, you’re looking at the entirety of the scientific literature, both specifically on the health endpoint you’re looking at, but also looking at converging lines of evidence. So, if you’re looking at gene and protein

¹⁸⁹ Exhibit B-1 – FBC’s Application, Appendix C-5 at p. 13.

expression, for instance, are downstream genes being affected or are specific pathways being affected. You know, you could see a gene changing, but you know, if other evidence, you know, if the proteins aren't being affected... when you're doing science, there's always false positives and there are always artifacts, and statistically, we expect these. So, that's why you're looking at the bulk of the scientific literature. And it's also very important when doing a weight of evidence evaluation that you're assessing the quality of studies, you're not just counting studies. One study found this and one study found that. You're actually assessing it for quality. There's a great many quality criteria you have to take into account in assessing.

Q.23 How does Health Canada assess the quality of a study?

A. We go through every document very very thoroughly. You have to look at the design of the experiment, does it have enough biological replicates, does it have enough cases, does it have enough statistical power to find an effect, did it run the appropriate statistics, if it's an animal or an in-vitro study, is thermal confounding, basically thermal artifacts, have they been properly accounted for, is the exposure system properly characterized, do we actually know what the dose is. I would say roughly half the papers in this field have improper design and characteristic of their exposure system, they don't even know what they're exposing, they don't know if there are hot spots in their sample. Really, there's a wide variety of quality in this literature.¹⁹⁰

158. As can readily be seen, this is a process by which Health Canada's experts exercise their specialized knowledge, experience and judgment in considering the scientific literature in its entirety, including the quality of studies considered.¹⁹¹

159. CSTS's criticism of the exercise of judgment in the weight of evidence process ignores the fact that judgment is a component of the two alternative approaches we have seen. The first is a "strength of evidence approach", which CSTS suggests the Commission should employ based on a one-sentence description of IARC's approach to classification from Dr. McNamee: "This group takes more of a strength of evidence approach, is there evidence that this could be a risk as opposed to a weight of evidence approach".¹⁹² That too is an approach involving the exercise of judgment. All assessment of evidence involves the exercise of judgment.

¹⁹⁰ Exhibit B-46 at pp. 14-16.

¹⁹¹ See also Exhibit B-1 – Appendix B-6, Safety Code 6, p. 9 of 30.

¹⁹² Exhibit B-46 at p. 14; quoted at CSTS Final Submission at p. 7.

160. CSTS's criticism that the weight of evidence process involves no published explanation of the analysis underlying its conclusions is factually wrong. Health Canada has, from time to time, sought the assistance of the Royal Society of Canada in assessing the adequacy of Safety Code 6. The Royal Society has then convened expert panels which prepared a detailed report including a weight of evidence analysis in 1999. The Royal Society also conducted informal updates of that analysis in 2003 and 2007; the 2003 update was published and peer-reviewed.¹⁹³ ICNIRP's report, which confirms limits of essentially the same magnitude as Safety Code 6, includes an in-depth analysis of its conclusions as to the weight of evidence considered.¹⁹⁴ The IEEE standard includes a detailed and lengthy discussion of its analysis using the weight of evidence approach.¹⁹⁵ Further, as to Health Canada itself, the evidence includes a Health Canada publication listing various research studies that it has undertaken directly and are publicly available in various journals.¹⁹⁶

161. CSTS's criticisms are also fundamentally misconceived. Health Canada in preparing Safety Code 6 does not act in a judicial or quasi-judicial capacity. It addresses the public interest in an appropriate safety standard for EMF exposure. Health Canada is not required to publish and circulate its weight of evidence analysis (although it has in the past requested such published reports from the Royal Society). Health Canada's role is clearly described in Safety Code 6:

Health Canada is the federal department responsible for helping the people of Canada maintain and improve their health. We assess the safety of drugs and many consumer products, help improve the safety of food, and provide information to Canadians to help them make health decisions. We provide health services to First Nations people and to Inuit communities. We work with the provinces to ensure our health care system serves the needs of Canadians.¹⁹⁷ [emphasis in original]

¹⁹³ Exhibit C9-17 at pp. 30-112 and Exhibit B-41 at pp. 2-34; see also T3, pp. 524-525 – Dr. Bailey and Exhibit B-46 at p. 74.

¹⁹⁴ Exhibit B-15-1 – Appendix BCH IR2 2.13 at pp. 90-353.

¹⁹⁵ Exhibit B-15-1 – Appendix BCH IR2 2.12 at pp. 30-139.

¹⁹⁶ Exhibit B-48.

¹⁹⁷ Exhibit B-1 – FBC's Application, Appendix B-6 at p. 4 of 30.

(iv) Alleged Views of Environmental Medicine

162. Mr. Shadrack suggests that Dr. Bailey “shows a complete lack of respect for the field of environmental medicine” and “was very disparaging of the AAEM physicians, and others, including the well known environmental medical specialist, Dr. Ray” (paras. 82, 104). The first claim is incorrect and the second is an overstatement. Dr. Bailey did not comment at all on the field of environmental medicine. Rather, he stated that a short AAEM statement without any assessment or review, apparently addressing only studies showing potential harm, could not be compared to a comprehensive assessment of the analysis of the evidence such as ICNIRP’s or the 2012 study commissioned by the U.K.’s Health Protection Agency.¹⁹⁸ Dr. Bailey also provided specific criticisms of the AAEM statement’s citation of studies for conclusions not supported by those studies.¹⁹⁹

163. As to Dr. Rea, Dr. Bailey described a report which Dr. Rea co-authored and indicated that he (Dr. Bailey) agreed with the conclusions of the WHO and the California Department of Health Services, which found Dr. Rea’s work scientifically wanting.²⁰⁰ Further, the only citation to Dr. Rea’s work in the written evidence filed by Interveners themselves is to a dated (1991) article cited in the endnotes to a statement from the AAEM on EMF and RF human health effects.²⁰¹

(c) How “Positive” the Exponent Report Can Be

164. CSTS notes that “[t]he Exponent Report does not make a positive statement that the proposed AML meters are safe” (page 61). This is also a point raised by Mr. Miles on page 4 of his submissions.

165. Had Exponent been biased as certain Interveners or witnesses suggest, surely it would not have let the opportunity pass to put its conclusion in more vigorous terms. Rather, however, Exponent properly recognized that science is unable to prove the

¹⁹⁸ T3, p. 495, l. 24 – p. 497, l. 7 – Dr. Bailey.

¹⁹⁹ T6, p. 1091, l. 5 – p. 1092, l. 14 – Dr. Bailey.

²⁰⁰ T6, p. 1079, l. 21 – p. 1080, l. 9; T6, p. 1084, l. 25 – p. 1086, l. 1 – Dr. Bailey.

²⁰¹ Exhibit C11-6 at p. 13.

negative, and that scientists must be careful not to extrapolate beyond the point where the research takes them.²⁰² A responsible scientist, like Dr. Bailey, is cautious and draws conclusions based on the best available evidence rather than stating conclusions in absolute terms. Dr. Bailey properly distinguished his role from that of a government²⁰³:

DR. BAILEY: A: Sir, my experience is in reviewing research and assessing its relevance, and not making policy recommendations that are the proper position of government health agencies. So, I'm called upon often to advise them about the state of scientific research, but in terms of how that information is then placed into perspective in terms of their program, that's in their area of expertise.

166. CSTS argues that Dr. Bailey's assertion that "science cannot prove the negative" as an explanation for why the Exponent Report does not state unequivocally that AMI meters are safe is inconsistent with the fact that the Environmental Protection Agency has recognized that there may be a "reasonable assurance" of safety (at p. 62). This plainly is incorrect. As explained by Dr. Bailey in testimony, a reasonable assurance that something is safe is not the equivalent of "total scientific certainty".²⁰⁴ In any event, while the Exponent Report did not make any findings based on total scientific certainty, it is noteworthy that when cross-examined by Mr. Aaron on the reasonable assurance standard, Dr. Blank testified that the evidence provides "reasonable assurance that the exposures to advanced meters do not pose a human health hazard".²⁰⁵

167. As to FortisBC, it has looked to applicable standards and concluded that its proposed AMI system complies in all respects with those standards.

J. Environment

(1) CSTS

168. CSTS advanced brief submissions regarding the environment (in one paragraph on page 72), asserting only that FortisBC has not adduced any evidence to counter Dr.

²⁰² T4, p. 570, ll. 13-18.

²⁰³ T5, p. 999, l. 11-18.

²⁰⁴ T5, p. 916, ll. 18-20.

²⁰⁵ T5, p. 915, ll. 21-24.

Jamieson's evidence. This fails to acknowledge FortisBC's evidentiary counter to Dr. Jameison's evidence, which is set out at paragraphs 617 to 620 of the Main Submission.

169. Properly CSTS itself has not even attempted to rely at all on the evidence of Dr. Kumar in this regard.

(2) BCPSO

170. BCPSO acknowledges that environmental benefits are likely to accrue if the AMI Project is approved, but expresses some concern with respect to the discontinuation of the existing meters (at p. 26). However, as was described in the Main Submission, the existing meters will require exchange in any event, due to new Measurement Canada requirements:²⁰⁶ the only question is what meters the old meters will be replaced with. Further, FortisBC has addressed the issue of salvaging the obsolete meters for scrap value. These scrap proceeds will be used by Itron to offset the costs of recycling and disposing of the meters.²⁰⁷ FortisBC also noted²⁰⁸:

Itron is required to be solely responsible for the care, custody and control of all removed meters from time of removal, through transport for final disposal at a disposal facility. Throughout, the meters are to be handled in accordance with all laws, including hazardous waste and transportation laws applicable in British Columbia and in each jurisdiction through which the meters are transported.

Itron has no incentive to re-use removed electromechanical meters as they are considered obsolete and will be salvaged for scrap value. Itron is required to apply any potential value from the digital meters against the cost of recycling/disposing of the meters.

(3) NCGPCA

171. Based at least in part on information that is not in the evidentiary record, as addressed in Part 2 above, NCGPCA argues that there are means other than the AMI Project to achieve environmental benefits. However, most or all of the intelligent grid

²⁰⁶ See Main Submission at pp. 69-70.

²⁰⁷ Exhibit B-6 – FBC's Response to BCUC IR1 39.1.

²⁰⁸ Exhibit B-6 – FBC's Response to BCUC IR1 39.1.

advantages described by NCGPCA will or could be part of the AMI Project, including integration of customer generation capability. In addition, to return to another point raised by NCGPCA, FortisBC already uses, almost exclusively, renewable sources of energy.

K. Fire Safety

172. None of the Interveners have made submissions as to fire safety except for CEC and BCPSO (page 26, ll. 734-737), which accept FortisBC's position in this regard.

L. Remote Disconnect

173. BCPSO advances a suggestion with respect to remote disconnection, namely that FortisBC be required to make personal contact with a customer prior to disconnecting service in all but exceptional circumstances (at p. 26). In accordance with its existing policies for disconnection, FortisBC will provide customers with notice by two different types of methods prior to disconnection,²⁰⁹ one of which includes physically visiting the premises to hang a tag on the door.²¹⁰

174. The simple fact that FortisBC will be able to disconnect a customer remotely (as opposed to physically attending the premise to remove the meter) does not imply that the Company's efforts to contact a customer prior to disconnection will be any less rigorous than they are today.

175. BCPSO also seeks clarification with respect to the charges associated with disconnection charges (at p. 11, ll. 302-305). FortisBC confirms that the \$200 charge referenced by BCPSO is the Company's current standard charge for the *physical* disconnection of a meter (\$100) and its subsequent reconnection (\$100).²¹¹ This charge remain unaffected by the implementation of AMI, as customers will still require that meters be physically disconnected and reconnected in certain instances.

²⁰⁹ Exhibit B-1 – FBC's Application at pp. 139-142; Exhibit B-6 – FBC's Response to BCUC IR1 92.1 (FortisBC Non-Pay Disconnect Policy) at pp. 220-221; Main Submission at p. 216.

²¹⁰ Exhibit B-11 – FBC's Response to BCPSO IR1 47.4

²¹¹ Exhibit B-6 – FBC's Response to BCUC IR1, 92.2.

176. If the AMI Project is implemented, the marginal cost of remote reconnection will be substantially decreased, meaning that in theory the reconnection fee may be dropped substantially. However, FortisBC proposes to maintain its current reconnection charges until the next COSA, to allow it to better under all the costs associated with the new processes.²¹² FortisBC agrees with BCPSO's submission that the application of overtime and after-hour reconnection charges may not be appropriate for customers whose meters FortisBC has determined will be manually read due for economic reasons but that these charges would be applicable to customers who decide to opt-out of receiving an AMI meter (at pp. 11-12).

177. BCPSO requests as well a reconciliation of remote disconnect savings (p. 12). There is nothing to reconcile: the unbilled consumption savings are embedded in the total figures provided in both IR responses.

M. Alleged Potential for Overbilling

178. None of the Interveners have made submissions as to potential overbilling except for CEC, which accepts FortisBC's position in this regard.

N. Public Opposition

179. CEC supports FortisBC's points in this regard. However, NCGPCA appears to assert that public opinion is central, without regard to the information which underlies it (page 2). FortisBC reaffirms the points made in its Main Submission.²¹³

180. Further, while NCGPCA says that "[p]ublic opinion received by the BCUC on the issue of smart meters is overwhelmingly against their installation" (page 2), as this statement itself makes clear, that is reflective not of the opinion of the public as a whole but the opinion of the limited number who participated in the process.

181. While NCGPCA invokes the concept of democracy in support of its submissions, its application of the term is highly selective. Democratic elections led to the

²¹² Exhibit B-6 – FBC's Response to BCUC IR1, 92.2.1.

²¹³ See Main Submission at p. 217.

composition of the legislature which enacted the *Clean Energy Act*, the formation of the government that enacted the Regulation, and indeed to the passage of the *Utilities Commission Act* which established the Commission and not a plebiscite (among a limited portion of the population, at that) as the ultimate decision-maker.

182. NCGPCA urges the Commission to be governed by a desire to distance itself from other regulatory agencies and not to be perceived as “biased in favour of project proponents” or as a “rubber stamp...in granting the proponent’s wishes” (page 3). However, the careful process that the Commission has followed shows that it is certainly not a “rubber stamp”. Further, it is not the case that a decision in favour of an applicant would be evidence of bias. The Commission addressed such an allegation earlier in this proceeding where raised by Mr. Shadrack. As the Commission Panel wrote at pages 10-11 of Appendix A to Order G-21-13:

The remaining allegation relates to its suggestion that the Commission Panel’s decision “to make matters of a financial, operational, fire safety and privacy nature, including consideration of the wired v. wireless option by written process only, under order G-177-12 also shows a certain bias against some interveners.”

The Commission Panel considers the allegations unfounded. Simply because the Commission Panel determines a matter against one party cannot, in and of itself, be said to create an apprehension of bias. As FortisBC submits, and the Commission Panel agrees, the use of an adverse decision fails to meet any kind of *prima facie* threshold for meeting the criterion that there has been a fundamental change in circumstances or facts. (Exhibit B-19, pp. 5-6)

O. Opt Out

(1) Intervener Suggestions

183. A number of Interveners express the opinion that if the Application is approved, a condition requiring an opt-out provision should be imposed. Opt out has been thoroughly discussed, both in written IRs and in oral testimony.

184. FortisBC’s position remains that an opt-out provision should not be imposed. There has been no credible evidence put forth that indicates such a program is warranted, necessary, or beneficial.

185. If the Commission orders an opt-out provision as a condition of approval of the Application, then the provision should be in the form proposed by FortisBC in IRs to preserve AMI Project benefits and keep opt-out costs borne by customers low.²¹⁴ These provisions necessitate that a radio-off AMI meter be installed for customers wishing to opt-out. In particular, the additional costs of delivering opt-out should be borne by those customers who choose to opt out. Those costs are already on the record²¹⁵ and would be as follows:

- (a) a one-time fee of approximately \$110 to recover administrative costs associated with processing opt-out requests and maintaining an inventory of radio-off meters, and incremental costs associated with additional collectors and repeaters required to ensure the integrity of the RF mesh network; and
- (b) a bimonthly manual download fee estimated at \$22 per read (assuming 0.5% opt-out rate) for labour, non-labour (such as time away costs and travel expenses), handheld support and vehicle expenses. This per-manual download fee would increase if fewer customers choose to opt out and decrease if more customers choose to opt out.

186. The fees and the radio-off meter requirement did not appear to be challenged during the regulatory process and final submissions. Interveners either said it should be no cost, or agreed with full cost recovery. No one took issue with the costs as calculated.

187. Should the Commission determine that opt-out should be implemented, the information required to do so is already on the record. No further process would be required, as implementation of opt-out as proposed by FortisBC can be accomplished by placing conditions upon the approval of the CPCN.

²¹⁴ Exhibit B-14 – FBC’s Response to BCUC IR2 50.2 at pp. 115-118.

²¹⁵ See detailed explanation at Exhibit B-11 – FBC’s Response to CEC IR1 50.6 and 50.6.1 at pp. 72-73 and Exhibit B-14 – FBC’s Response to BCUC IR2 50.2 at pp. 115-118.

188. With regard to further opt-out conditions sought by Mr. Shadrack and BCPSO, FortisBC does not have the expertise or capacity to properly evaluate individual customers' medical situations with regard to provision of opt-out. If opt-out is to be ordered, it should be equally available to all customers, on the terms set out in FortisBC's Response to BCUC IR2 50.2, without the need for any explanation as to the customer's reasons for opting out. Nevertheless, FortisBC will always take into account extenuating circumstances which may apply to an individual customer.

(2) "Due Process" Has Been Observed

189. NCGPCA at page 7 of its submissions and Mr. Shadrack at para. 119 of his submissions have suggested that FortisBC has somehow disregarded "due process" in respect of the issue of opt out, or that it is proceeding "unilaterally". This is inaccurate. FortisBC has submitted its Application in accordance with the *Utilities Commission Act* and has gone through a rigorous public process, which has included extensive opportunity for Interveners and Interested Persons to appear before the Commission in person and through written submissions, to challenge FortisBC's evidence through a combination of oral and written processes, and indeed to help shape the scope and nature of the process itself.

190. This exercise has included considerable debate in respect of whether there should be an opt-out provision and, if so, how it should be constituted. There is disagreement in respect of the substance of the issues, but there can be no doubt that the process has been fair to those who disagree with FortisBC's views of the appropriate outcome.

(3) Unfounded Constitutional Arguments

191. NCGPCA at page 7 and Mr. Shadrack at paragraphs 114-115 further suggest that FortisBC's proposal, particularly in relation to EHS and opt out, violates the *Canadian Charter of Rights and Freedoms* (the **Charter**). Again, these allegations are unfounded.

192. First, setting aside for a moment the substance of the issues, as a matter of law FortisBC's proposal could not violate the *Charter* no matter what its content, as section 32(1) of the *Charter* limits its application to government actors:

This Charter applies

(a) to the Parliament and government of Canada in respect of all matters within the authority of Parliament including all matters relating to the Yukon Territory and Northwest Territories; and

(b) to the legislature and government of each province in respect of all matters within the authority of the legislature of each province.

193. As a private company, FortisBC does not fall within this category. As such, the *Charter* does not govern its actions or proposals.

194. Second and more fundamentally, even if the *Charter* were to apply, FortisBC's proposal does not constitute a breach, for all the reasons set out in the Main Submission and in this reply.

P. Alleged Interference

195. Mr. Shadrack suggests there may be disruption to wireless internet services (paras. 62-64), partly in reliance on the testimony of Dr. Sears, who is not qualified to address such issues as a technical matter. FortisBC's evidence in this regard is that the AMI meters and other equipment intended for use in the same frequency band have been designed to co-exist with minimal impacts to each other. This is particularly the case where each system has been designed and installed using best practices. While there may be some situations where small amounts of interference may occur between AMI meters and wireless internet providers, no appreciable amount of interference is expected to occur nor will any potential issues be irresolvable.²¹⁶

²¹⁶ Exhibit B-6 – FBC's Response to BCUC IR1 31.2.1; Exhibit B-11 – FBC's Response to Shadrack IR1 24.

Q. Whether the Commission Should Delay

196. While CSTS advances what it describes as the “Case for Waiting” (pp. 71-72), the evidence demonstrates not only that there is no justification for such a delay, but also that any delay would significantly impact the customer benefits expected to accrue from the AMI Project. No delay should occur.

197. Presently, FortisBC is in a position where “to do nothing is not a viable option”, to use the language of BCSEA (p. 10). Facing a pending phase-in of revised Measurement Canada compliance requirements, FortisBC must act quickly to replace existing meters on an accelerated basis.²¹⁷

198. Without the implementation of AMI, FortisBC will begin incurring additional capital costs of \$0.75 million to \$2.1 million in 2014, related to implementing manually-read digital meters to comply with the Measurement Canada Guidelines.²¹⁸ By implementing AMI prior to this time, FortisBC will avoid unnecessarily duplicating capital costs associated with first installing manually-read digital meters and later replacing them with AMI meters.²¹⁹

199. In addition to increasing capital costs, delaying the implementation of the AMI Project will delay the realization of many of the resulting financial benefits of the Project, such as reducing the losses that result from energy theft within the FortisBC service territory.²²⁰ It is estimated that a delay in implementation for a period of two years would decrease the overall benefits of the AMI Project by \$5.7 million.²²¹

200. Further, delay will create uncertainty with respect to the costs of ultimately implementing the AMI Project. Presently, Itron has agreed to hold firm all prices negotiated in 2011 until August 1, 2013, at which time FortisBC must elect whether to proceed with the Project or not. The contract does not make provision for what will

²¹⁷ Exhibit B-1 – FBC’s Application at p. 18.

²¹⁸ Exhibit B-6 – FBC’s Response to BCUC IR1 3.1.

²¹⁹ Exhibit B-6 – FBC’s Response to BCUC IR1 2.1.

²²⁰ Exhibit B-6 – FBC’s Response to BCUC IR1 2.1.

²²¹ Exhibit B-6 – FBC’s Response to BCUC IR1 2.1.

occur with pricing if the decision to proceed is made after this time, and it is likely to increase.²²²

201. In contrast with the certainty of costs that will result from delay, there is an absence of any justifiable reason for delay. CSTS indicates that a decision should be suspended pending the Royal Society review of Safety Code 6. There is no basis on which to assume that the Royal Society review will result in any change to Safety Code 6. While Mr. Miles says that “[t]here is clearly much yet to be learned about RF impacts” (page 6), Dr. Bailey’s testimony is that RF fields have already undergone an enormous amount of scrutiny by scientists:²²³

DR. BAILEY: A: I can’t speculate about the future, sir, but we do have an awful lot more evidence about radio frequency field exposure and its potential effects than many of the 50 to 80,000 chemicals that are in everyday use, of which perhaps only a few hundreds, or certainly less than a thousand have ever received the scrutiny that radio frequency fields have undergone by scientists.

202. Even if a substantial change were to result from the Royal Society review resulting in a new limit modelled after those favoured by various of the Interveners, the AMI meters would continue to satisfy these requirements. See the discussion above regarding the fact that the proposed meters comply even with standards in China and Russia, for example.

203. In order for the proposed meters to become non-compliant, the limits imposed would have to be so severe that a vast array of technology on which the world now depends, including the billions of cell phones presently in use, could not be used.

204. Given all the above, any risk that the AMI Project faces as a result of the Royal Society review is virtually non-existent.

²²² Exhibit B-6 – FBC’s Response to BCUC IR1 3.1.

²²³ T3, p. 503, ll. 7-14.

205. As Dr. Bailey testified, "I don't have a scientific basis, based upon the evidence we have, to recommend that Fortis delay its application, or that the deployment of smart meters would be premature."²²⁴

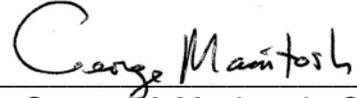
206. FortisBC submits that as a result, the Company's current timing of the AMI Project proposal is not only appropriate, but fully in accordance with the public's interest in minimizing costs and realizing the benefits of the AMI Project.

PART IV - CONCLUSION

207. In light of all the above, FortisBC reaffirms its request that a CPCN be granted to develop and deploy the AMI Project and that the Commission approve a revised depreciation rate for the proposed AMI meters, to be installed as part of the AMI Project.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

Counsel for FortisBC Inc.:



George K. Macintosh, Q.C.



Ludmila B. Herbst

Dated: May 2, 2013

²²⁴ T3, p. 506, ll. 4-7.

BRITISH COLUMBIA UTILITIES COMMISSION

IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

FortisBC Inc.
Application for a Certificate of Public Convenience and Necessity
for the Advanced Metering Infrastructure Project

**AUTHORITIES IN REPLY SUBMISSIONS OF FORTISBC INC.
DATED MAY 2, 2013**

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7. Alan W. Bryant, Sidney N. Lederman and Michelle K. Fuerst, eds., *Sopinka, Lederman & Bryant: The Law of Evidence in Canada*, 3rd ed. (Markham, Ontario: LexisNexis Canada, 2009) at 377
8. David H. Kaye, David E. Bernstein and Jennifer L. Mnookin, *The New Wigmore: Expert Evidence*, 2d ed. (New York: Aspen Publishers, 2010) at pp. 122-124
9. Mary T. Ainslie, et al., eds., *Introducing Evidence at Trial: A British Columbia Handbook*, 2d ed. (Vancouver: Continuing Legal Education Society of British Columbia, 2013) at 50-51
10. *RSS Gen – General Requirements and Information for the Certification of Radio Apparatus* (December 2010), ss. 1.1, 1.2.1
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TAB 1

COURT OF APPEAL FOR BRITISH COLUMBIA

Citation: ***Buksh v. Miles,***
2008 BCCA 318

Date: 20080808
Docket: CA034092

Between:

Mustak Ahmed Buksh and Anita Buksh

Appellants
(Plaintiffs)

And

Johnny Tad James Miles

Respondent
(Defendant)

And

Insurance Corporation of British Columbia

Respondent
(Third Party)

Before: The Honourable Madam Justice Saunders
The Honourable Madam Justice Kirkpatrick
The Honourable Mr. Justice Frankel

W.D. Mussio

Counsel for the Appellants

G.M. Hagel

Counsel for the Respondents

Place and Date of Hearing:

Vancouver, British Columbia
January 9, 2008

Place and Date of Judgment:

Vancouver, British Columbia
August 8, 2008

Written Reasons by:

The Honourable Madam Justice Saunders

Concurred in by:

The Honourable Madam Justice Kirkpatrick
The Honourable Mr. Justice Frankel

Reasons for Judgment of the Honourable Madam Justice Saunders:

[1] After a trial by judge and jury, the action of Mr. and Mrs. Buksh for damages for injuries sustained in a motor vehicle accident was dismissed with costs against them. They appeal, saying the trial judge made errors in the conduct of the case with the result that they did not receive a fair trial. They contend as well that the jury verdict is perverse and contrary to uncontradicted evidence that they suffered injury in the accident.

[2] The motor vehicle accident occurred on March 29, 2002, when the vehicle carrying the appellants stopped for a red light and was struck from behind by a vehicle driven by Mr. Miles. Liability of Mr. Miles was admitted.

[3] Mr. Buksh, a realtor, was 47 years old at the time of the accident and 51 years old at the time of trial. He alleged that he had suffered injury to his neck, back, and knees, and that he suffered headaches and some other minor problems arising from the accident.

[4] Mrs. Buksh, a hairdresser, was 43 years old at the time of the accident and 47 years old at the time of trial. By the time of the trial, she had relinquished her work because, she said, of ongoing problems caused by the accident. She alleged an injury to her lower back and right shoulder, and said the shoulder injury limited her ability to work with her arms in the position required of a hairdresser, causing her first to reduce her hours and then to cease working as a hairdresser altogether in May 2004.

[5] The respondents contended at trial that the plaintiffs lacked credibility and their assertions that they suffered injury in the accident should not be believed.

[6] The jury was asked in separate questions whether Mr. Buksh and Mrs. Buksh sustained personal injury as a result of the car accident. The jury answered “No” to each question, with the result that the action was dismissed.

[7] The appellants advance four grounds of appeal. They candidly acknowledge that each of the first three grounds, by itself, may not be enough to allow them to succeed in setting the order aside. They say, however, that taken together, they establish an unfair trial. The grounds alleged are:

- 1) the trial judge erred in allowing the respondent to seek an adverse inference for failure of the appellants to call evidence from all their doctors;
- 2) the trial judge erred in not allowing the clinical records to go before the jury;
- 3) the trial judge erred in allowing the respondent to cross-examine extensively on collateral issues in regards to Mr. Buksh; and
- 4) the jury verdict is perverse in finding no injury to either appellant in the face of uncontradicted evidence to the contrary.

[8] The first complaint of the appellants concerns the instruction given to the jury that it could draw adverse inferences against the plaintiffs because they did not call

all physicians they had seen in connection with their alleged injuries. To fully understand the extent of medical evidence before the jury, it is useful to address the second ground of appeal first — removal of clinical records from the evidence before the jury.

[9] The appellants complain that at the beginning of the trial both counsel, by agreement, presented two volumes, one entitled “Joint Book of Documents of Mr. Buksh” and the other “Joint Book of Documents of Mrs. Buksh”. The volumes included, for Mr. Buksh, clinical records of Dr. Mudaliar, Fraser Heights Medical Centre, Guildford Medical Centre, Dr. Caines, and Rehab Max, and for Mrs. Buksh, clinical records of Dr. Mudaliar, Fraser Heights Medical Centre, and Dr. Hughes.

[10] The trial judge expressed concern about leaving the clinical records with the jury, absent evidence explaining them, in this exchange:

THE COURT: Now, with respect to the medical records, I have had a lot of difficulty with medical records. I think that they often include things that shouldn't properly be before the jury, that the jury draws from conclusions from them, and my concern is that you may have included full medical records with such things as the sticky note about Dr. Hughes that shouldn't properly be before the jury. So what is included in the medical records?

COUNSEL FOR THE PLAINTIFFS: We have included full clinical records from the treating physicians of the plaintiffs. That's been my practice. It's there to provide for evidence of when the plaintiff was there and what the plaintiff said to the doctors and as to on what the doctor is basing his opinion.

THE COURT: But you're calling the doctors, correct?

COUNSEL FOR THE PLAINTIFFS: Yes.

THE COURT: The doctors will be able to --

COUNSEL FOR THE PLAINTIFFS: Well, we're calling the -- the family physician. The plaintiffs were treated by other doctors, as well. There were some walk-in clinics, and there was a specialist in the case of Mr. Buksh who is not being called. So there are other doctors, as well.

THE COURT: To the extent that the doctors are being called and the plaintiffs are being called, they can say who they saw, when they saw them, and those sorts of things. To the extent that there are notes made in the records, I don't think they serve a legitimate purpose, if I can put it that way. In other words, the plaintiff can say what they were complaining of. The doctors that are called can say what was said to them. But the notes that are made in the records I think do more disservice to the parties than they do service to the parties. I -- I think it's a bad idea to put the records in. You may be able to bring them in within business -- the business records exception, but it does a disservice to the parties to have the medical records there. They go in front of the jury. Nobody is being called to testify about them. Nobody is being called to explain what their notes mean. The jury draws conclusions without having any evidence to base it on, and I think it doesn't do anybody any good. So I'm inviting you to reconsider what you've done with respect to medical records.

[11] In the result, the clinical records were removed from the books, as seen in this exchange:

THE COURT: -- don't have a problem with them being left in to the extent that you propose to cross-examine on them. My concern is notes that nobody ever touches on in evidence, where they simply go in front of the jury, and the jury draws whatever conclusion they will from them. Because they don't have the evidence with respect to what those notes mean. So, for example, in a case that I had, there's an X-ray report. Nobody ever touches on it, and the jury goes away and conclude whatever they want from the X-ray report. They have no expertise to interpret that X-ray report. No expert is called to assist them, and yet they go away with an expert report. Those sorts of things are the concerns that I have.

COUNSEL FOR THE RESPONDENT: Perhaps what we could do, My Lady, is -- is remove them from the books and then to the extent that they're referred to, hand them out to the jury -- --

THE COURT: That would -- --

COUNSEL FOR THE RESPONDENT: -- with the instruction -- --

THE COURT: -- certainly be my -- --

COUNSEL FOR THE RESPONDENT: -- to put them -- --

THE COURT: -- preference, where -- --

COUNSEL FOR THE RESPONDENT: -- in the appropriate tab.

THE COURT: -- to put them in the book. Because to the extent they're referred to, certainly they're appropriate to go before the jury, but where they are not referred to at all, I think they are not appropriate to go before the jury.

COUNSEL FOR THE PLAINTIFFS: That would be acceptable to me, My Lady.

[12] Of the doctors whose clinical notes were removed from the joint book, Dr. Hari of the Fraser Heights Medical Centre, Dr. Tadros of the Guildford Medical Centre, and Dr. Caines, an orthopaedic surgeon, were not called as witnesses and their clinical records were never re-tendered.

[13] The trial judge, in my view, was squarely within her discretion to control the trial process in suggesting that simply presenting clinical records to a jury as part of a book of documents was not a desirable way to proceed. I see nothing in her comments that precluded either counsel from applying to tender all or some of those documents, having established their admissibility by correctly introducing them through a witness, producing them as business records, or advancing them on such other basis as may have been available. It is significant that the plaintiffs' trial counsel did not object to their removal from the books. Indeed, he could not have done so because it is always open to a trial judge to require a proper foundation for admission of any document notwithstanding the agreement of counsel to the contrary.

[14] Mr. Mussio, counsel for the appellants on appeal, acknowledges correctly that this complaint concerning removal of documents from the joint book, by itself, cannot win the appeal, but he says it bears on the issue of the invitation given by the trial judge to the jury to draw adverse inferences against Mr. Buksh because Dr. Hari, Dr. Tadros and Dr. Caines did not testify, and against Mrs. Buksh because Dr. Hari did not testify. He says that had the clinical records of those doctors been exhibits, the fact of the visits of Mr. and Mrs. Buksh to those doctors would have been clear, redounding in favour of their credibility and countering the defendant's submission that the plaintiffs' failure to call these witnesses should lead to an inference that their evidence would not have supported the plaintiffs' claims of injury from the accident, which were not to be believed.

[15] While it may be that the clinical records would have filled this function, I cannot say the trial judge erred in having the documents removed from the agreed books of documents. Nor can I say the plaintiffs were prejudiced by that removal; the plaintiffs, at an early stage of the trial, were alerted to the need to re-tender those documents if they wished to rely upon them in any way.

[16] I return, then, to the first ground of appeal, the issue of the invitation to draw an adverse inference.

[17] Mrs. Buksh testified she first consulted a walk-in clinic doctor within days of the accident in relation to low back pain, which she contends was caused by an injury sustained in the accident. The doctor, Dr. Hari, practiced at the Fraser Heights Medical Centre located in the mall in which Mrs. Buksh worked.

Approximately eight weeks later, in May 2002, Mrs. Buksh consulted her family physician, Dr. Mudaliar, complaining of both low back pain and shoulder pain. Dr. Mudaliar prepared medical opinions that were exhibits at trial, and he testified. In his report he stated:

Mrs. Buksh most likely sustained a soft tissue strain to her lower back and right shoulder. Her shoulder injury caused her partial disability for work and activities of daily living until at least May 2003. Her prognosis is good with eventual recovery likely without permanent injury.

[18] Mr. Buksh testified he, too, first consulted Dr. Hari of the Fraser Heights Medical Centre for problems arising from his accident. He also consulted his family physician, Dr. Mudaliar, Dr. Tadros of the Guildford Medical Centre and Dr. Caines. As to Mr. Buksh, Dr. Mudaliar said in medical opinions introduced at trial:

In summary Mr. Buksh sustained a soft tissue strains to his neck and back during the March 2002 car accident. This has caused him partial disability for work and activities of daily living until at least the end of June 2003. His prognosis is good and no permanent disability is expected.

and:

Mr. Buksh was also assessed by Dr. Cecil Caines, an orthopaedic surgeon on May 5, 2003. Physical examination by Dr. Caines revealed decreased forward lumbar flexion. Neurologic examination was normal. There was normal lumbar lordosis without spasm or scoliosis. The sacroiliac joints were felt to be normal. Dr. Caines diagnosed mechanical low back pain. Exercise was recommended.

[19] The plaintiffs did not call either of the two doctors from the walk-in clinics (Dr. Hari and Dr. Tadros) as witnesses. They also did not call Dr. Caines, although Dr. Mudaliar referred to his opinions in the passage replicated above.

[20] Injury to both Mr. and Mrs. Buksh was in issue throughout the proceedings. For that reason, an independent medical examiner, Dr. Schweigel, examined Mr. and Mrs. Buksh at the request of the third party, the Insurance Corporation of British Columbia, and by agreement of counsel for Mr. and Mrs. Buksh.

[21] Dr. Schweigel examined both Mr. and Mrs. Buksh, but provided a written opinion only in respect to Mrs. Buksh. He was called as a witness to explain that he had not been asked to provide a written opinion concerning Mr. Buksh, and to answer questions on his opinion concerning Mrs. Buksh. His written medical opinion stated:

Diagnosis:

This lady sustained some soft tissue injuries to the neck. These soft tissue injuries would have been a strain of muscles and ligaments.

and:

Prognosis:

This lady will not develop any degeneration and/or arthritis of the low back. She will not require any surgery. She will not be more prone to injury in the future because of this low back problem she had on March 29/02. I will not comment on the prognosis for the right shoulder as, in my opinion, it is unrelated to the MVA of March 29/02, and is elaborated on in the section "Opinion."

[22] Near the end of the trial, after the plaintiffs had closed their case and before Dr. Schweigel testified, trial counsel for Mr. and Mrs. Buksh advised the Court he would ask the judge to instruct the jury that they could draw an adverse inference from the fact Dr. Schweigel examined Mr. Buksh on behalf of the third party and was not asked to prepare a written opinion concerning Mr. Buksh. This prompted counsel for the third party, at the close of evidence, to advise the court that he may argue for an adverse inference arising from the fact certain treating physicians of Mr. Buksh were not called. Counsel for the plaintiffs made no comment in reply.

[23] The next day, in addressing the jury, counsel for the plaintiffs said, concerning the absence of evidence from Dr. Schweigel in relation to Mr. Buksh:

At no time during the cross-examination or otherwise did ICBC suggest that anything other than the accident of March 29th, 2002 was the cause of Mr. Buksh's injuries. ICBC could have had a report from Dr. Schweigel on Mr. Buksh. He certainly put Mr. Buksh through enough. Dr. Schweigel was in a position to write such a report. They chose not to. Why? It's open to you to conclude, and I ask you to do so, that ICBC knew that a report from Dr. Schweigel would not be helpful to them. That he wouldn't say anything different from what Dr. Mudaliar had said. You can then conclude, based on that and the rest of the evidence that you heard, that Mr. Buksh is a credible witness and that he has suffered and is still suffering from the injuries that he sustained in the accident of March 29th, 2002.

[24] In his address to the jury, counsel for the third party referred to Dr. Schweigel's evidence, gave his explanation for the fact Dr. Schweigel had not prepared a report on Mr. Buksh, and said as to adverse inferences:

He says you should draw an adverse inference against ICBC because I didn't get a report from Dr. Schweigel about Mr. Buksh. Well, what about Mr. Buksh and his doctors? He has seen Dr. Mudaliar, Dr. Tadros, Dr. Hari, who's the first doctor who treated him, and

Dr. Caines, who's an orthopaedic surgeon, a specialist. We have two reports from Dr. Mudaliar. We don't have a report from Dr. Hari, even though Dr. Hari was the first doctor to treat Mr. Buksh. We don't have a report from Dr. Tadros, even though, as you heard in cross-examination, he told me on examination for discovery that he probably saw Dr. Tadros more than he saw Dr. Mudaliar. And we don't have a report from Dr. Caines, the specialist who treated Mr. Buksh. ...

[25] In reply, counsel for Mr. and Mrs. Buksh explained why he had not obtained expert reports from the clinic doctors and Dr. Caines:

Now, I'd just like to finish by saying something about the doctors. Mr. Hagel said we didn't get reports from Dr. Hari, Dr. Tadros and Dr. Caines.

You heard the evidence Dr. Hari and Dr. Tadros work at walk-in clinics. These are the people that the Bukshs go and see when they can't get down to Dr. Mudaliar's office, when he's too busy, when they've got something they need to deal with fairly quickly. They're not their family doctors. They're not the people who know the Bukshs and treat them all the time and know their history. That's why we didn't get reports from them, because they're not the right people to get reports from. A clinic sees, I don't know, 50, a hundred patients a day. They see them very quickly. There's the sign on the wall that says just deal with one thing. And they are not the right people to give a report, and that's why we didn't get the report from them.

Now, Dr. Caines we didn't get a report because Dr. Mudaliar had Dr. Caines' opinion, and he incorporated that opinion into his report. There was no need to get another report that just said the same thing.

[26] The trial judge instructed the jury as to adverse inferences in relation to Dr. Schweigel, and in relation to Drs. Hari, Tadros and Caines:

You also heard evidence that Dr. Schweigel examined Mr. Buksh on behalf of the third party, but the third party has not provided his opinion with respect to Mr. Buksh's injuries.

You have heard the explanation provided by counsel for the third party that he determined that it was not necessary for the third party to

obtain the opinion of Dr. Schweigel with respect to Mr. Buksh's injuries and told Dr. Schweigel not to prepare a report.

In these circumstances, you may -- not must -- draw an inference against the third party for failure to produce an opinion from Dr. Schweigel. In other words, you may conclude that the evidence of Dr. Schweigel would not have supported the third party's suggestion that Mr. Buksh's injuries were not caused by the accident or were not as severe as he said they were.

If you accept the explanation provided by counsel, you should not draw this inference.

and:

You also heard evidence that Mr. Buksh saw Drs. Hari, Tadros and Caines, and Mrs. Buksh saw Dr. Hari. None of them provided opinions with respect to the plaintiffs' injuries. Again you may -- not must -- draw an adverse inference against the plaintiffs that the opinions of those doctors would not have supported the plaintiffs' position. You also heard the explanation provided by counsel for not obtaining a report from those doctors. If you accept the explanation provided by counsel, again you should not draw an adverse inference against the plaintiffs.

[27] At the conclusion of the charge, counsel for Mr. and Mrs. Buksh did not object to the instruction on adverse inferences.

[28] On this appeal, counsel for Mr. and Mrs. Buksh say the trial judge erred in instructing the jury it draw an adverse inference in relation to the opinion of a doctor they consulted who was not called as a witness, citing *McTavish v. MacGillvray* (1997), 38 B.C.L.R. (3d) 306 (S.C.); *Morton v. McCracken* (1995), 7 B.C.L.R. (3d) 220, 57 B.C.A.C. 47; *Lawson v. Vu*, 2000 BCSC 206; *Xavier v. de Jesus Nobrega*, [1994] B.C.J. No. 1007 (S.C.) (QL); *Gyorffy v. Johal*, [1991] B.C.J. No. 763 (S.C.) (QL); and *Mate v. Nour*, [1999] B.C.J. No. 930 (S.C.) (QL).

[29] The respondent in turn refers to the lack of objection by counsel to the charge, particularly in relation to Mrs. Buksh, and says there was no miscarriage of justice, citing *McTavish v. MacGillvray*, *Staples v. Monacelli* (1997), 33 B.C.L.R. (3d) 126 (S.C.); *Palmer v. Goodall* (1991), 53 B.C.L.R. (2d) 44 (C.A.); and *Prest v. Buckland (Guardian ad litem of)*, [1997] B.C.J. No. 2345 (C.A.) (QL). The respondent says there was ample evidence upon which the jury could find Mr. and Mrs. Buksh lacking in credibility, apart from any adverse inference, and that the dismissal of both claims is supported by the evidence.

[30] The notion of adverse inference is related to the best evidence rule. The observation in Wigmore's *Evidence in Trials at Common Law*, Chadbourne Rev. (Toronto & Boston: Little Brown & Company: 1979) vol. II, §287, at 202-3, offers valuable guidance:

Furthermore, it seems plain that possible witnesses whose testimony would be for any reason comparatively *unimportant*, or *cumulative*, or *inferior* to what is already utilized, might well be dispensed with by a party on general grounds of expense and inconvenience, without any apprehension as to the tenor of their testimony. In other words, put somewhat more strongly, there is a general limitation (depending for its application on the facts of each case) that the inference cannot fairly be drawn except from the non-production of witnesses whose testimony would be *superior* in respect to the fact to be proved.

[Emphasis in original.]

[31] The general proposition long applied in British Columbia, stated by Mr. Justice Davey in *Barker v. McQuahe* (1964), 49 W.W.R. 685 (B.C.C.A.), is that an inference adverse to a litigant may be drawn if, without sufficient explanation, that

litigant fails to call a witness who might be expected to give supporting evidence. Further, said Mr. Justice Davey at 689, a plaintiff seeking damages for personal injuries “ought to call all doctors who attended him in respect of any important aspect of the matters that are in dispute, or explain why he does not do so”.

[32] It seems to me that the tactic of asking for an adverse inference is much over-used in today’s legal environment, and requires, at the least, a threshold examination by the trial judge before such an instruction is given to the jury.

[33] A judge trying a case with a jury is bound to instruct the jury as to the applicable law, and thereby to assist the jury in its consideration of the evidence and determination of the facts. Whether an adverse inference is drawn from failure to call a witness is a question for the trier of fact. In this case, I cannot say the trial judge erred in the content of the instruction she gave the jury on the matter of adverse inferences. However, it bears reminding that the delivery of medical care is not now as it was in 1964 when Mr. Justice Davey made his comments in **Barker**. There is, today, a proliferation of “walk-in” medical clinics where the role of the “walk-in” clinic physician may be more limited than was the role of a family physician in 1964. Further, even people who have a family doctor may attend one or more such clinics as a matter of convenience, but still rely upon their family physician for core medical advice and treatment. The proposition stated by Mr. Justice Davey does not anticipate this present model of medical care. Likewise, the discovery process available to both sides of a lawsuit is not now as it was in 1964 when, in explaining his view on the need to call all treating physicians, Mr. Justice Davey referred to the professional confidence between a doctor and the patient. Today, the free

exchange of information and provision of clinical records through document discovery raises the possibility that an adverse inference may be sought in circumstances where it is known to counsel asking for the inference that the opinion of the doctor in question was not adverse to the opposite party.

[34] Taking the admonition of Mr. Justice Davey to the extreme in today's patchwork of medical services raises the likelihood of increased litigation costs attendant upon more medical reports from physicians or additional attendances of physicians at court, with little added to the trial process but time and expense, and nothing added to the knowledge of counsel. Perhaps the idea that an adverse inference may be sought, on the authority of **Barker**, for the reason that every walk-in clinic physician was not called fits within the description of "punctilio" that is no longer to bind us, referred to by Mr. Justice Dickson in **R. v. Sault Ste. Marie**, [1978] 2 S.C.R. 1299, in a different context.

[35] In this environment, and bearing in mind the position of a lawyer bound to be truthful to the court, it seems to me there is a threshold question that must be addressed before the instruction on adverse inferences is given to the jury: whether, given the evidence before the court, given the explanations proffered for not calling the witness, given the nature of the evidence that could be provided by the witness, given the extent of disclosure of that physician's clinical notes, and given the circumstances of the trial (e.g., an initial agreement to introduce clinical records that work contrary to the inference, or incorporation of that witness's views or observations in the report of a witness called by the other side) a juror could reasonably draw the inference that the witness not called would have given evidence

detrimental to the party's case. Where, as here, the trial started on the basis that all records should be before the jury, and ended with a request for an instruction on adverse inferences, and when both counsel have explained the failure to call the witness or witnesses by referring to their own assessment of the utility or need for the evidence, the answer to the threshold question I have stated is not self-evidently affirmative. In this case, in my view, the judge herself should have heard the explanations, considered the degree of disclosure of that witness's files and the extent of contact between the party and the physician, received submissions and determined whether a reasonable juror could draw the inference sought before giving the instruction to the jury for its consideration in its fact finding role. If not, the instruction had no place in her charge to the jury.

[36] The respondents say, referring to **Brophy v. Hutchinson** (2003), 9 B.C.L.R. (4th) 46 (C.A.); **Matich-Robbins v. Roden**, 1999 BCCA 141, 121 B.C.A.C. 142; **Morton v. McCracken**, *supra*; **Sinclair v. Collins**, 2006 BCCA 291, 54 B.C.L.R. (4th) 276; and **Basra v. Gill** (1994), 99 B.C.L.R. (2d) 9 (C.A.), that the appellants are doomed in this appeal because no objection was taken to the jury charge.

[37] It is true that this Court often has considered the lack of objection to a procedural deficiency or error fatal to an appeal. However, given the manner in which this issue arose, the timing of the various elements that have compounded the deficiency, and its effect on the fairness of the trial process, I do not consider the appeal should fail for this reason. Notwithstanding the lack of objection to the process by counsel for the plaintiffs, I consider this one of those instances in which

the order should be set aside on the basis of procedural unfairness, and a new trial ordered.

[38] Nor does it assist the respondent to say, as in *Prest*, that there is more than ample evidence upon which to satisfy us that the jury's apparent assessment that the two plaintiffs lacked credibility was inevitable even without an invitation to draw an adverse inference. One must assume that it was important to the respondent's case, else the submission would not have been sought. Further, because the issue was one of credibility, a matter solely within the purview of the trier of fact, the issue is significant. One cannot know that the jury would have had in mind absent the request by counsel and the judge's instruction.

[39] In reaching this conclusion, I have not addressed the issue of the extensive cross-examination of Mr. Buksh on matters said to be collateral, or the appellants' submission that the verdict was perverse.

[40] On the former, Mr. and Mrs. Buksh complain that Mr. Buksh was cross-examined at length on his financial circumstances and disputes he had with others in the community. I consider both of these areas of examination bore on the quantum of damages; the first bore on the basis of Mr. Buksh's claim for lost income and the latter bore on his claim for non-pecuniary damages for diminishment of enjoyment of life. While the cross-examination may have been long-winded, it related to issues before the court and was for the trial judge to control at her discretion. I would not agree that the cross-examination of Mr. Buksh is a basis upon which to interfere with the verdict.

[41] Was the verdict perverse? Although the submission in the appellants' factum is directed to both appellants, at the hearing of the appeal the submission was narrowed to Mrs. Buksh's claim only. I agree that the order, dependent as it is on the jury's negative answer to the question of whether Mrs. Buksh suffered injury, is perverse. Both Mrs. Buksh's family physician and the independent medical examiner (who reviewed the medical records of Dr. Hari) concluded that Mrs. Buksh had suffered injury to her low back. Setting aside her claim for injury to her right shoulder, the evidence of the two doctors is not reasonably capable of an interpretation that Mrs. Buksh suffered no injury. For that reason, had I not formed the view that the entire action should be remitted for a new trial, I would set aside the verdict as it relates to Mrs. Buksh and order a new trial of her claim.

[42] In conclusion, I would allow the appeal, set aside the order and direct a new trial.

"The Honourable Madam Justice Saunders"

I AGREE:

"The Honourable Madam Justice Kirkpatrick"

I AGREE:

"The Honourable Mr. Justice Frankel"

TAB 2

In the Court of Appeal of Alberta

Citation: Sincennes v. Alberta (Energy and Utilities Board), 2009 ABCA 167

Date: 20090505

Docket: 0801-0054-AC

Registry: Calgary

Between:

**Diane Sincennes, Norman Sincennes, David Swanson, Ted Swanson,
Roy Swanson Farms Ltd., Art Vanklei, Lawrence Mazutinec,
Sheila Mazutinec, Tony Cudrak, Beverly Cudrak,
Ken Glover Professional Corporation, Brad Moser, Willem Kempert,
Van Giessen Growers Inc., Tony Boss, and Dave Van Pelt**

Appellants (Interveners)

- and -

**Alberta (Energy and Utilities Board), Alberta (Alberta Utilities Commission) and Alberta
Utilities Commission, Montana Alberta Tie Ltd. (MATL) and Naturener Energy Canada
Inc. and Naturener USA LLC**

Respondents (Applicants)

- and -

Judith Tudor

Intervener

Corrected judgment: A corrigendum was issued on November 30, 2009; the corrections have been made to the text and the corrigendum is appended to this judgment.

Corrected judgment: A corrigendum was issued on November 27, 2009; the corrections have been made to the text and the corrigendum is appended to this judgment.

The Court:

**The Honourable Madam Justice Carole Conrad
The Honourable Madam Justice Constance Hunt
The Honourable Mr. Justice Clifton O'Brien**

**Reasons for Judgment Reserved of the Honourable Mr. Justice O'Brien
Concurred in by the Honourable Madam Justice Hunt**

Dissenting Reasons for Judgment of the Honourable Madam Justice Conrad

Appeal from Decision 2008-0006 of
Energy Utilities Board/Alberta Utilities Commission
Dated the 31st day of January, 2008

**Reasons for Judgment Reserved of
the Honourable Mr. Justice O'Brien**

Introduction

[1] The National Energy Board (NEB) issued a permit to Montana Alberta Tie Ltd. (MATL) to construct and operate an international power line (IPL), described as a “merchant line”, from Lethbridge, Alberta, to Great Falls, Montana. The permit specified a general corridor for the routing of the transmission line within Alberta.

[2] MATL also applied to the Alberta Energy and Utilities Board (EUB; sometimes the Board) to construct and operate the IPL. The EUB found the IPL to be in the public interest and that it did not have jurisdiction to consider alternative routes outside the general corridor specified in the permit. The appellant landowners were granted leave to appeal the decision of the EUB relative to its jurisdiction with respect to the selection of the location of the IPL, and whether that Board correctly identified and applied the test for public interest under the governing legislation, particularly having regard to the merchant nature of the project.

Legislative Scheme

[3] It is useful at the outset to briefly outline the legislative processes governing IPL approvals; one an entirely federal process, and the other, a dual process involving both federal and provincial regulatory agencies.

[4] The *National Energy Board Act*, R.S.C. 1985, c. N-7 (*NEB Act*), was amended in 1990 to provide two alternative processes for the approval of international power lines. The existing *certificate* process, involving the exercise only of federal law, was retained. A *permit* process was added, involving both federal authority and delegated provincial authority, which latter process makes provincial laws applicable to certain matters. An applicant is entitled to elect which process it invokes.

[5] An election for the certificate process necessitates a public hearing before the NEB, which then determines all aspects of the approval, including location and detailed routing. Alternatively, an applicant applying for the permit process may receive authorization for the construction and operation of an IPL without a public hearing conducted by the NEB. In such case, the NEB issues a permit upon its determination that the application conforms with federal laws, including federal environmental standards. If the NEB issues a permit, then provincial laws related to certain specified matters will apply to the portions of the IPL that are within the province. The EUB at the relevant time was the provincial regulatory agency designated to administer the Alberta laws applicable in such instance to an IPL.

[6] Even if an applicant elects the permit process, the NEB may recommend to the responsible federal Minister that the IPL be designated by order of the Governor in Council to be subject to the certificate process. If the recommendation is accepted and an order issued, then the application will be dealt with pursuant to the certificate process, including a public hearing.

[7] At the time the legislative scheme was introduced, the Minister responsible for the Bill stated its purpose:

. . . [T]he basic principle governing the new policies that there should be no unwarranted duplication of federal and provincial regulations.

He also explained certain intended changes:

In addition to those changes regarding the procedure for the authorization of exports and power lines, there will also be changes in the way that the detailed routing of international power lines is determined. The National Energy Board will, in all cases, authorize the general corridor through which the line will pass. The precise location of the line within this corridor will then be determined by provincial regulatory procedures and any expropriation that may be necessary will also be carried out under provincial laws.

(Emphasis added)

(House of Commons Debates, No. 34 (June 26, 1989) at 3583-3584, Hon. Jean J. Charest).

[8] The Minister pointed out the difficulties with spheres of jurisdiction that can *sometimes overlay* and “lead to duplication by two levels of Government”. This led him to comment that “the practice of federalism is often not a very easy one”. This comment is also pertinent to the issues on this appeal. While the objectives of the legislation undoubtedly are laudable, the legislation and the decision of the NEB granting the permit expose ambiguities and uncertainties with respect to the scope of the powers delegated to the provincial designate.

Factual Background

[9] It is necessary to set out the factual background in some detail to appreciate the issues on this appeal.

[10] MATL elected the permit process. By application dated December 20, 2005, and updated on October 20, 2006, it applied to the NEB to construct and operate a 230 kV IPL from Lethbridge, Alberta, to the international border at a point approximately 20 kilometres southwest of the town of Milk River, Alberta.

[11] Notice of the application was published in the *Canada Gazette* and the *Lethbridge Herald*. Various landowners and interested parties submitted Letters of Comment challenging the need for, and proposed routing of, the IPL, and expressing concerns as to its potential for adversely affecting the environment, agricultural operations and physical health of those persons residing in the vicinity of the transmission line.

[12] The NEB conducted an environmental assessment for the proposed project, and prepared an Environmental Screening Report as required by the *Canadian Environmental Assessment Act*, S.C. 1992 (the *CEA Act*) as amended, and the *NEB Act*.

[13] Various federal and provincial government departments participated in the environmental assessment, and there was also extensive public participation. The Screening Summary within the Report stated in part:

The NEB is the Federal Environment Assessment Coordinator for this Project. Transport Canada declared itself as a Responsible Authority and Environment Canada (EC), Department of Fisheries and Oceans, Indian and Northern Affairs Canada and Health Canada declared themselves as Federal Authorities who were in the possession of specialist advice. Alberta Sustainable Resource Development (ASRD) and a number of interested parties also participated in the environmental assessment process.

In December 2005, MATL applied for a 2-km wide corridor for a 123 km Power Line. The southern portion of the Initial Preferred Corridor (IPC) traversed the environmentally sensitive Milk River Ridge region. There were a number of potential adverse environmental effects, both biophysical and socio-economic, that were identified for the IPC. Following numerous information requests from the NEB and comments from EC and ASRD, in October 2006 MATL submitted a Revised Preferred Corridor (RPC) that avoided the environmentally sensitive area. MATL's revised corridor significantly reduced the potential for biophysical effects, by avoiding the Milk River Ridge region.

The NEB has considered information provided by MATL, government departments, and the public during its review of the Project. The Board is of the view that provided all commitments and environmental protection measures made by MATL are upheld, and the Board's recommendations are implemented, the proposed Project is not likely to cause significant adverse environmental effects.

(Emphasis added)

[14] Some members of the public, including the appellant landowners, made submissions to the NEB that it should recommend to the Minister that the Governor in Council designate MATL's application for a certificate procedure. That process would have involved a public hearing by the NEB, including determination both of location and routing of the IPL. However, the NEB concluded that further inquiry into the application was not warranted, and granted the permit.

NEB Decision (April 4, 2007)

[15] In granting the permit authorizing the construction and operation of the proposed IPL, the NEB commented:

... [T]hen under section 58.19 and section 58.2 of the *NEB Act*, provincial laws for electric transmission lines related to any of the following matters will apply to portions of the IPL that are within Alberta:

- (a) the determination of their location or detailed route;
- (b) the acquisition of land required for the purposes of those lines, including its acquisition by expropriation, the power to so acquire land and the procedure for so acquiring it;
- (c) assessments of their impact on the environment;
- (d) the protection of the environment against, and the mitigation of the effects on the environment of, those lines; or
- (e) their construction and operation and the procedure to be followed in abandoning their operation.

[16] The NEB discussed the concerns of the landowners with respect to routing, and noted that one of them, Van Giessen Growers (an appellant in this appeal), had requested that the Board impose a condition requiring MATL “to use an alternative route should impacts on individual landowners and their agricultural operations be significant”. The NEB rejected the request, saying:

... [W]ith respect to the condition proposed by Van Giessen Growers, the Board has assessed the significance of impacts of the proposed IPL. Many of the landowner concerns are discussed in Section 5.3 of the of the Environmental Screening Report which outlines mitigation options MATL has committed to using. The Board has also taken landowner concerns into consideration under the *NEB Act*. ... However, within the general corridor which is the subject of the application before the Board, the Board is satisfied with MATL’s proposed mitigation options to address landowner concerns.

(Emphasis added)

Permit EP - 301

[17] The permit lists 16 terms and conditions. The fourth and sixth are particularly relevant:

4. MATL shall cause the IPL to be designed, manufactured, located, constructed, installed and operated in accordance with those specifications, drawings, and other information or undertakings set forth in its application and in its related submissions.

...

6. MATL shall implement or cause to be implemented all of the policies, practices, mitigative measures, recommendations and procedures for the protection of the environment and the promotion of safety referred to in its application or as agreed to in its related submission, including the Management Plan for Addressing Impact to Agricultural Operations.

EUB Decision 2008-006 (January 31, 2008)

[18] MATL applied to the EUB pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*, R.S.A. 2000, c. H-16 (HEEA), for approval to construct and operate the subject merchant transmission line. The Board stated it was the first application to come before it through the NEB process. The EUB further noted that “there were significant differences of opinion among the hearing participants as to how the Board should interpret the jurisdiction [of the EUB] arising from the statutory delegation under the *NEB Act*”, (EUB Decision at 9).

[19] A major issue was the location of the transmission line. The Board pointed out that under the provincial legislation, an applicant for a transmission line would be required to set out “different corridors and /or specific routes” in sufficient detail “to allow the Board to determine if the applied for route was an appropriate route for the transmission line when compared with other potentially viable routes for the line”, (EUB Decision at 17).

[20] The EUB received the evidence of R. Berien, who testified that the line would have less impact on dryland farmed lands than irrigated ones, and consequently suggested that better routes lay significantly outside the two kilometre corridor approved by the NEB, which crossed substantial portions of irrigated farmed lands.

[21] With respect to routing, the Board commented that its delegated authority allowed for a “more limited scope to its review than it would have for an intra-provincial transmission line”. The Board further stated that although it “seriously considered Mr. Berien’s evidence”, due to constraints imposed by the NEB decision his evidence “provided limited assistance”, (EUB Decision at 20). In terms of its delegated jurisdiction, the EUB concluded at 12:

. . . [T]he EUB does not believe that its jurisdiction extends to considering the relative merit of corridors beyond the preferred route as the matter of corridor selection was assessed and approved by the NEB. The Board does find that it has the jurisdiction to consider the effects associated with the detailed route selection.

[22] The EUB also discussed whether the proposed transmission line was in the public interest. It commented that the proposed merchant line was Alberta’s first interconnection to the United States. It explained that interconnections paid for and built by private enterprise based on market need are known as “merchant” lines. Such a line is based on a “user-pay” concept and no financial burden is transferred to the public (EUB Decision at 55).

[23] At the time of the hearing in November 2007, section 14(3) of the HEAA required the EUB to consider whether the facility would be required to meet “present and future public convenience and need”. On January 1, 2008, before the EUB decision was issued, section 14(3) was retroactively revoked and replaced with section 17 of the *Alberta Utilities Commission Act*, S.A. 2007, c. A-37.2 (AUCA), which required the EUB to consider whether the facility “is in the public interest, having regard to the social and economic effects”.

[24] The EUB applied the requirement in the HEAA, as well as the public interest mandate set out in other relevant legislation. Section 15(3)(d) of the *Alberta Energy and Utility Board Act*, R.S.A. 2000, c. A-17 (AEUBA), permitted the EUB to make orders or add conditions that the EUB considered “necessary in the public interest”. Section 2 of the HEAA, which states the purposes, includes regulation of electric energy “in the public interest”. Section 3 of the *Energy Resources Conservation Act*, R.S.A. 2000, c. E-10 (ERCA), required the EUB to “give consideration to whether the project is in the public interest, having regard to the social and economic effects of the project and the effects of the project on the environment”, (EUB Decision at 53-54).

[25] The EUB stated that “the Board views ‘public convenience and need’ as subsumed under its public interest mandate”. This also required an assessment of “the various social, economic and environmental effects” of MATL’s project. The Board found that the need for this project was unique, as it was based on the interests of market participants rather than “system deficiencies or constraints”. Nonetheless, there were projected benefits to Albertans, and given that the project’s costs were to be borne by private investors rather than Alberta ratepayers, the EUB was willing to grant the approval. It concluded at 57:

... [I]f the mitigation measures that MATL has proposed in its evidence before the Board are substantially successful in meeting the needs and reasonable expectations of those directly and adversely affected by the proposed transmission line, their interests, too, will have been satisfied as well as the public interest as a whole.

Issues on Appeal

[26] Leave was granted on the following two issues:

- (a) Whether the EUB erred in its interpretation and application of the interplay of jurisdiction between the NEB and the EUB under the *National Energy Board Act*, particularly in relation to the selection of the location of an international power line;
- (b) Whether the EUB erred in its interpretation and application of the public interest test, particularly in light of the “merchant nature” of the project.

[27] The appellants are certain landowners affected by the proposed transmission line. Another landowner was granted intervenor status. (The appellants and the intervenor are collectively referred to as the landowners.) In addition to MATL, the EUB is a statutory respondent. Naturener Energy Canada Inc. and Naturener U.S.A. LLC (collectively, Naturener) have contracted the rights to ship power on the line, and are also respondents.

Standard of review

[28] The standard of review with respect to the jurisdiction allocated to the NEB and EUB under the *NEB Act* is correctness. The Supreme Court of Canada in *Dunsmuir v. New Brunswick*, 2008 SCC 9, [2008] S.C.J. No. 9 at para 61 stated that “questions regarding the jurisdictional lines between two or more competing specialized tribunals [are] subject to review on a correctness basis”.

[29] The standard of review with respect to a tribunal’s application of its public interest mandate is reasonableness; determination of what is in the public interest has been held to be a matter of administrative discretion and a formulation of opinion: *Memorial Gardens Association Ltd. v. Colwood Cemetary Co.*, [1958] S.C.R. 353 at 357. To the extent, however, that the issue requires the determination of the test for what constitutes public interest, the standard of review is correctness.

[30] In *ATCO Gas Pipelines Ltd. v. AEUB*, 2006 SCC 4, [2006] 1 S.C.R. 140, the majority judgment examined the nature of public interest within the context of the standard of review, and observed at para. 31:

This question is undoubtedly one of law and jurisdiction. The Board would arguably have no greater expertise with regard to this issue than the courts. A court is called upon to interpret provisions that have no technical aspect . . . The interpretation of general concepts such as “public interest” and “conditions” (as found in s. 15(3)(d) of the AEUBA) is not foreign to courts and is not derived from an area where the tribunal has been held to have greater expertise than the courts.

Analysis

A. Location and route of the IPL

[31] For purposes of the permit process, the following parts of section 58 of the *NEB Act* provide for the application of provincial law to those portions of the IPL within the province:

58.2 The laws from time to time in force in a province in relation to lines for the transmission of electricity from a place in the province to another place in that province apply in respect of those portions of international power lines that are within that province.

58.19 For the purposes of sections 58.2, 58.21 and 58.22, a law of a province is in relation to lines for the transmission of electricity from a place in the province to another place in the province if the law is in relation to any of the following matters:

- (a) the determination of their location or detailed route;
- (b) the acquisition of land required for the purposes of those lines, including its acquisition by expropriation, the power to so acquire land and the procedure for so acquiring it;
- (c) assessments of their impact on the environment;
- (d) the protection of the environment against, and the mitigation of the effects on the environment of, those lines; or
- (e) their construction and operation and the procedure to be followed in abandoning their operation.

58.21 A provincial regulatory agency designated under section 58.17 has, in respect of those portions of international power lines that are within that province, the powers and duties that it has under the laws of the province in respect of lines for the transmission of electricity from a place in the province to another place in that province, including a power or duty to refuse to approve any matter or thing for which the approval of the agency is required, even though the result of the refusal is that the line cannot be constructed or operated.

58.22 Terms and conditions of permits and certificates and Acts of Parliament of general application are, for the purpose of applying the laws of a province under section 58.2 or 58.21, paramount to those laws.

[32] Read alone, section 58.19 confers upon the provincial regulatory agency, in this case the EUB, the jurisdiction to apply existing Alberta laws in relation to the determination of the location or detailed route of that portion of an IPL within the province. As noted by the EUB in its decision, in the case of intra-provincial lines, a proponent must propose alternative routes and defend its preferred route as to the best one available.

[33] However, section 58.19 cannot be read alone. By section 58.22, the terms and conditions of permits are made paramount to provincial laws that would otherwise apply pursuant to section 58.2. Here, condition no. 4 of the permit granted by the NEB expressly required that MATL cause the IPL to be “located” in accordance with its application and related submissions. Its application designated a two kilometre corridor in which the detailed route would lay.

[34] MATL initially applied for a corridor in which to locate its pipeline that crossed the Milk River Ridge. In the course of the assessment of that corridor, MATL changed it and resubmitted its application so as to avoid the Milk River Ridge entirely. As a consequence, the corridor that was environmentally assessed and approved was the two kilometre corridor that was “the subject of the application before the” NEB.

[35] The Environmental Screening Report of the NEB specifically dealt with the subject corridor in its discussion of the effects of the transmission line on agricultural operations. The “Views of the Board” were expressed as follows:

- (i) The requested permit is for a 2-km wide corridor.
- (ii) Environmental and socio-economic effects can be mitigated in many ways depending upon the project, the environment, and the impact that has been identified. Often, a combination of approaches is required to effectively mitigate the effects. The Board notes that MATL has prepared a Management Plan for Addressing Impacts to Agricultural Operations, which indicates that MATL has approached the issue of impacts on agricultural operations with several main objectives:
 - (a) Avoiding impacts where possible.
 - (b) Mitigating those impacts that could not be avoided, and
 - (c) Compensating landowners for the remaining impacts after mitigation efforts.
- (iii) The Board also notes that MATL has indicated that it is prepared to work in partnership with landowners to address the impacts of the proposed Power Line on their land. The Board expects MATL to pursue these approaches in the above sequence and to follow the criteria used for implementation of mitigative measures as identified in the Management Plan for Addressing Impacts to Agricultural Operations.
- (iv) Given the proposed mitigation measures and MATL’s Management Plan for Addressing Impacts to Agricultural Operations, the Board is of the view that the proposed Power Line would not likely cause significant adverse effects on agricultural operations.

[36] Condition no. 6 of the Permit requires MATL to implement the practices and mitigative measures, including the Management Plan. It is clear that the measures and plan are those put

forward by MATL to address the concerns of the landowners within the subject two-kilometre corridor, including those portions of irrigated lands transversed by the transmission line.

[37] Likewise, with respect to the potential human health effects upon affected landowners within the corridor, the NEB expressed its views, as follows:

- (i) The parties did not dispute that the proposed Power Line would result in increased EMF [Electromagnetic Fields] levels or that people crossing the proposed Power Line would be exposed to these increased levels. However, it appears there is disagreement over whether there would be any serious health effects associated with exposure to these increased levels.
- (ii) The Board is of the view that, overall, the evidence does not establish a causal relationship between EMF exposure and significant health effects. The Board notes that the magnetic field levels for proposed Power Line would be well below the public exposure levels stipulated by the ICNIRP guidelines, and the electric field levels for the proposed Power Line would be below the recommended values from AltaLink. The Board further notes that there are no Alberta or Canadian standards for EMF levels to provide any guidance either for regulatory evaluation or for mitigation.
- (iii) The Board is of the view that should the proposed Power Line be approved, the change in EMF levels from the proposed Power Line would not likely cause any significant adverse effects on human health.

[38] The appellants properly point out that the EUB possesses broad powers in dealing with the location of intra-provincial transmission lines. They argue that the EUB is entitled to take into account evidence of relative impacts outside the corridor and evidence of poor corridor selection. If such evidence is not considered, they say that they have been denied a full oral hearing and seek to have this Court purposively interpret the legislation in order to avoid such result.

[39] The appellants submit, correctly in my view, that both the governing legislation and the NEB decision are ambiguous, or at least difficult to interpret, as to the scope of authority intended to be left to the EUB, as the provincial designate, to deal with location and routing of the line. The NEB stated that if it issued MATL a permit, then provincial laws would apply to those portions of the IPL that are within Alberta related to, amongst other things, “the determination of their location or detailed route”. Later, in dealing with the permit condition sought by Van Giessen Growers, the NEB stated:

The Board is aware that should it issue an IPL permit to MATL, the Board would not be the regulatory agency which determines many matters contained in landowner concerns submitted to the Board. Land acquisition, as well as determination of the

location and of the detailed route of the proposed IPL, would take place according to the laws of the Province of Alberta. However, within the general corridor which is the subject of the application before the Board, the Board is satisfied with MATL's proposed mitigation options to address landowner concerns.

(Emphasis added)

[40] The "location" of the line and its "detailed route" are not synonymous terms. Nor does the legislation define these terms. However, as acknowledged by the respondent Naturener in its factum, those terms should be interpreted as distinct concepts. "Location" is generally understood to refer to the macro location of the line, that is, the "corridor" applied for by MATL in its application. On the other hand, "detailed route" is the micro or specific route the IPL will take.

[41] The NEB's comment that both the location *and* detailed route would be determined in accordance with Alberta law is confusing, if not misleading. In this regard, the last sentence of the above quotation from the decision of the NEB, which refers to the general corridor, may have been intended to qualify the preceding sentence, or may simply be an indication that the NEB was satisfied that the general corridor was satisfactory, but was leaving it to the EUB to make the ultimate determination relative both to the location and detailed routing.

[42] The confusion within the NEB's decision may stem from the language of section 58.19, which speaks to the application of provincial law with respect to the determination of the "location *or* detailed route" of transmission lines within the province. If the term "or" is disjunctive, then it may operate satisfactorily in cases in which the NEB has specified the general corridor, leaving the provincial designate only to deal with the detailed route within such general corridor. However, the *NEB Act* does not require the NEB to select the corridor. In that case, both location *and* detailed route would be left to the provincial delegate, not one *or* the other. It is important that the NEB clearly deal with the issue of location, as landowners do not obtain a public hearing on the issue of location (i.e., the general corridor) if an applicant elects the permit process and the NEB chooses to specify the corridor. On the other hand, if no corridor is specified by the NEB, then the landowners will gain a public hearing, at least in Alberta, through application of provincial law. The question of location is, of course, of vital concern to landowners within the vicinity of a proposed transmission line.

[43] As an aside to the above comment, the practicalities of the NEB leaving open the matter of location are subject to question. Since the NEB is required to assess the environmental impacts of a project, presumably it must first identify the corridor; e.g., whether it will transverse irrigated or dry farmed lands. In these circumstances, regardless of the reference in section 58.19 to provincial law being applied with respect to "location", it does not seem likely that this will, in fact, ever occur, except perhaps in unusual circumstances. In any event, it is unfortunate that the NEB decision suggested to the landowners that they would have their hearing before the EUB to deal with "the determination of the location *and* of the detailed route of the proposed IPL" (emphasis added).

[44] However, whatever the confusion arising from the NEB's written decision, section 58.22 does not give paramountcy to the language of the decision, but rather to "the terms and conditions of permits". The language of condition no. 4 is clear. It requires the IPL to be constructed and operated within the general corridor applied for by MATL.

[45] It is clearly within the NEB's power to include such a condition. The *National Energy Board Electricity Regulations*, S.O.R. /97-130, specifically provide that "the location of the facilities" is a matter "in respect of which terms and conditions *may* be included in any permit for the construction and operation of an international power line", (s. 6) (emphasis added).

[46] In short, the NEB has made it a condition of the permit that the subject transmission line be constructed and operated within the general corridor applied for by MATL. To the extent that the NEB decision suggested that location could be dealt with by the provincial delegate, condition no. 4 is incompatible therewith. If the permit does not express the NEB's intention, then that was a matter for further application to the NEB. This Court is bound to treat condition no. 4 as paramount pursuant to section 58.22.

[47] The landowners alternatively submit that if the EUB cannot approve a location outside the general corridor designated by the NEB, the EUB must still consider evidence of such other potential routes and, if MATL has not selected a corridor permitting the best route, then the Board should deny its approval. They cite section 58.21, which grants the provincial designate express powers to refuse to approve a matter, even if this results in precluding the construction or operation of the proposed transmission line.

[48] This submission fails to take into account that the NEB, after conducting an environmental assessment and receiving extensive submissions from both federal and provincial government departments as well as from the public, determined that the corridor applied for by MATL is acceptable. That decision was within its jurisdiction over location, so the laws of Alberta regarding location do not apply.

[49] The function of the EUB is not to second-guess the NEB. Provincial laws relative to the location of international transmission lines are only applicable when so delegated by the federal government. In this case, provincial laws are expressly made subordinate to the terms and conditions of the federal permit. The NEB's authority to issue the permit conditions it imposed have not been challenged. Condition no. 4 requires the IPL to be constructed and operated within the two-kilometre corridor applied for by MATL. It is only the detailed route within the corridor that has been left to be dealt with by the provincial board, as the EUB so found (EUB Decision at 57).

[50] Because the NEB determined the corridor in which the transmission line would be located and specified such as a term of the permit, the possibility of alternative locations outside the corridor has been removed from the provincial designate's authority. A contrary interpretation would promote operational conflict. If the EUB determined that a different corridor were appropriate, the

NEB findings would be revisited and the permit process would be subverted because the provincial designate could undo the permit through refusing its approval on the basis that another location was superior. This would be contrary to the purpose of the amendments to the federal legislation described by the Minister at paras. 7-8 above.

[51] However, the landowners submit that as a matter of fundamental justice, they were entitled to a “full oral hearing” on all issues, whether at the federal or provincial level, and that the legislation should be construed accordingly. In this case, if MATL had elected the certificate process, or if the NEB had recommended such process and its recommendation has been accepted by the Governor in Council, then the NEB would have conducted a public hearing. However, the NEB expressly determined that “further inquiry into MATL’s application [was] not warranted”. It refused to recommend a process involving a public hearing.

[52] The *NEB Act* does not provide for an oral hearing with respect to those matters dealt with by the NEB in the permit process. To the contrary, the *NEB Act* specifically states that a permit shall issue “without holding a public hearing” (s. 58.11). However, the *CEA Act* allows for public participation (s. 18) with respect to the environmental impacts of a project, and extensive participation occurred in this case.

[53] Procedural fairness does not require that interested parties be given the right to an *oral* hearing in every situation. Meaningful participation can be achieved through various ways: *Baker v. Canada (Minister of Citizenship and Immigration)*, [1999] 2 S.C.R. 817, [1999] S.C.J. No. 39 at para. 33; *Knight v. Indian Head School Division*, [1990] 1 S.C.R. 653, [1990] S.C.J. No. 26 at para. 53.

[54] Here, the landowners urge that since they did not have a full oral hearing before the NEB, the legislation should be interpreted as conferring jurisdiction upon the EUB to conduct such an hearing into all issues concerning them. In other words, if they did not get the oral hearing before the NEB, then it must be intended that the provincial designate will conduct a full hearing.

[55] This submission is flawed. The landowners acknowledge that the NEB conducted what they refer to as a “paper hearing”, and further that they brought forward all of their concerns in their submissions to the NEB. This, in fact, appears to be the case.

[56] Extensive submissions by Letters of Comment were made by the landowners to the NEB in each of March and November 2006. These submissions were wide-ranging and dealt with the impacts of the proposed transmission line on their agricultural operations, the environment and their personal health. The NEB expressed its view on each of these issues, and more, in the Environmental Screening Report.

[57] It would be contrary to the objective of the legislative scheme, which is to avoid duplication of processes, if the same matters were required to be dealt with by the provincial designate in terms

of corridor selection. Further, it offends the principle of estoppel, including abuse of process, to permit the provincial designate to conduct a hearing to determine if the NEB's corridor selection was an appropriate determination. This would constitute re-litigation of the same issue and a collateral attack upon the earlier determination: Sara Blake, *Administrative Law in Canada*, 4th ed. (Markham, Ont.: LexisNexis Butterworths, 2006) at 135; *Danyluk v. Ainsworth Technologies Inc.*, 2001 SCC 44, [2001] S.C.R. 460 at paras. 19-22.

[58] In the context of abuse of process, it is relevant to note that an application for leave to appeal the NEB's decision was made to the Federal Court of Appeal by an individual (not one of the landowners before us) alleged to be affected by the grant of the permit to MATL. The grounds of the application included that the NEB had erred in law and jurisdiction with respect to matters said to be within the jurisdiction of the EUB, including "determination of the location and route of the transmission line", and further that the NEB "had exercised its discretion unreasonably, in declining to make a recommendation to the Minister that the power line be designated by order of the Governor in Council under section 58.15 of the Act". The application for leave was dismissed: *Brian Staszewski v. National Energy Board and Montana Alberta Tie Ltd.*, Federal Court of Appeal, Docket No. 07-A-22. It is not open for the EUB to redetermine what has already been determined by the NEB, i.e., the location of the transmission line.

[59] In short, the fact that the landowners are disappointed both by the NEB's selection of the corridor and by its decision to select the corridor without recommending the certificate process, which would have meant a public hearing, is no ground for involving the EUB in a consideration of locations outside the corridor approved by the NEB.

[60] These broad comments should not be misconstrued. We recognize that some of the same considerations brought forward by the landowners to the NEB were properly before the EUB in its determination of the detailed route within the general corridor. The EUB was required to, and did, hear evidence concerning the impact of different detailed routes within the general corridor on agricultural operations, environmental and related matters. Our remarks are directed at evidence challenging the selection of the general corridor. For this reason, the EUB properly held the evidence of Mr. Berien to be of limited assistance to the extent that it went beyond consideration of the selection of detailed routes within the general corridor and impacts thereof.

B. Public Interest

[61] The landowners point to the retroactive legislative amendment pursuant to which the "public convenience and need" test found in section 14(3) of HEEA was replaced by the "public interest" test found both in section 3 of the ERCA and section 17 of the AUCA. They submit that neither section 3 of the ERCA, nor section 17 of the AUCA, allows the EUB to consider all aspects of public interest. Instead, in its consideration of public interest, the Board is to have regard only to the "social and economic effects of the project and the effects of the project on the environment".

[62] Put another way, the landowners argue that the EUB is only entitled to decide whether a project is in the public interest if the benefits outweigh the costs of the project in terms of the social and economic effects, and the effects of the project on the environment.

[63] The landowners submit that the EUB thereby erred in concluding at 54:

. . . [T]here is no meaningful difference or distinction to be made between “public convenience and need” and “public convenience and necessity” and regards them as synonymous. Furthermore, as explained below, the Board views “public convenience and need” as subsumed under its public interest mandate.

[64] As a result of this alleged error, the landowners contend that the EUB failed to require evidence that the proposed transmission line met a need of Albertans. They argue that the absence of such evidence required the EUB to dismiss MATL’s application.

[65] Finally in this regard, the landowners submit that there was no evidence of any social or environmental benefits whatsoever, absent which the EUB had no jurisdiction to determine that the proposed transmission line was in the public interest. Alternatively, this made the decision unreasonable. In addition, they suggest the EUB gave undue weight to the potential (called, “speculative”) benefits and thereby made an unreasonable decision.

[66] We are reluctant to categorize “need to Albertans” as a requisite element of public interest, having regard to the flexibility accorded to terms of that nature. In *Memorial Gardens Association (Canada) Limited v. Colwood Cemetery Company*, [1985] S.C.R. 353, Abbott J. speaking for the majority said at 357:

. . . [I]t would, I think, be both impracticable and undesirable to attempt a precise definition of general application of what constitutes public convenience and necessity. As has been frequently pointed out in the American decisions, the meaning in a given case should be ascertained by reference to the context and to the objects and purposes of the statute in which it is found.

As this Court held in the Union Gas case, [*Union Gas Company of Canada Limited v. Sydenham Gas and Petroleum Company Limited*, [1957] S.C.R. 185], the question whether public convenience and necessity requires a certain action is not one of fact. It is predominantly the formulation of an opinion. Facts must, of course, be established to justify a decision by the Commission but that decision is one which cannot be made without a substantial exercise of administrative discretion. In delegating this administrative discretion to the Commission the Legislature has delegated to that body the responsibility of deciding, in the public interest, the need and desirability of additional cemetery facilities, and in reaching that decision the degree of need and of desirability is left to the discretion of the Commission.

(Emphasis added)

[67] The same point, although somewhat differently expressed, was made by the NEB in its decision in *Emera Brunswick Pipeline*, which was cited in the decision of the EUB:

Throughout the jurisprudence and commentary on “public convenience and necessity” and “public interest”, the phrase “public convenience and necessity” has generally been treated as synonymous with public interest. The public convenience and necessity test is predominantly the formulation of an opinion by the tribunal. This opinion must be based on the record before it; that is to say, the decision must be based not only on facts but with the exercise of considerable administrative discretion. Similarly, there are no firm criteria for determining public interest that will be appropriate to every situation. Like “just and reasonable” and “public convenience and necessity”, the criteria of public interest in any given situation are understood rather than defined and it may well not serve any purpose to attempt to define those terms too precisely. Instead, it must be left to the Board to weigh the benefits and burdens of the case in front of it.

(*Emera Brunswick Pipeline Company Ltd.*, NEB Decision GH-1-2006 at 10, cited in the EUB Decision at 54).

[68] In any event, within the context of public interest, the EUB in fact found that the proposed IPL met a “need”. The EUB stated at 57:

The Board accepts MATL’s evidence that the MATL project likely will:

- (i) Add an interconnection point to the Alberta grid in a location that could fill a need in the future at no risk to rate payers.
- (ii) Enhance access to American export markets.
- (iii) Make the Alberta wholesale system more competitive by providing access to more import and export markets and the opportunity to increase the number of players.
- (iv) Support the Alberta government’s Transmission Development Regulation and Policy.

We infer from the reasons that the term “likely” was used in the sense that these things were reasonably foreseeable as a result of the construction and operation of the IPL. In our view, the Board did not rely merely on speculative benefits.

[69] Alberta's Transmission Development Policy Paper, Alberta Energy (November 2003) lists as conclusion no. 8:

Transmission internal to Alberta should be reinforced so that under normal conditions, the existing inter-ties can import and export power on a continuous basis, in accordance with their design capability.

and explains thereunder at 9:

Inter-ties are an essential part of a competitive market both as a means to import power when needed, and to export surplus energy and to support effective functioning of the wholesale market. Without such capabilities, market signals and wholesale prices are distorted and unreflective of true market conditions. Since the ability of inter-ties to exchange electricity in both direction (i.e. import and exports) is essential to a robust wholesale market and a reliable electric system, the cost for internal reinforcements and RAS arrangements to allow the inter-ties to function as designated will be allocated to load.

[70] The EUB further noted at 57 of its Decision that it had considered both sides of what it referred to as "the public interest teeter totter", and then concluded: "The Board is satisfied that the MATL project fulfills a *need* that is of benefit to the citizens and commercial and industrial interests of Alberta", (emphasis added).

[71] The Board's decision demonstrates that it had ample evidence regarding the social, economic, and environmental effects of the proposed IPL, and that it undertook a comprehensive balancing of those effects. It stated at 55 of its Decision:

The Board's overall conclusions as to whether the proposed MATL project is in the public interest is based on a balancing of the various social, economic and environmental effects that would result from the MATL project. The Board's conclusions are derived from all of the evidence adduced by AESO, AltaLink and MATL and the numerous intervenors who participated in the Board's assessment of their respective applications relating to the MATL project.

[72] The record before us demonstrates that the EUB did as it said. The decision shows extensive consideration of agricultural and other land use impacts (28-33); the process of land acquisition required for the transmission line, including impact on land values (33-38); impacts on irrigation and aerial spraying (38-39); impacts on, mitigation and protection of, the environment (39-42); and impact of construction and operation of the transmission line with respect to noise, wetlands, birds, wildlife, electromagnetic fields, and radio and television interference (42-51).

[73] We are satisfied that the EUB’s assessment of public interest was made having regard to the broad range of benefits and burdens associated with the construction and operation of the IPL. The assessment was made after a comprehensive review of the specific social, economic and environmental effects of the proposed line, including those that are unique to a merchant line. There is no reason to disturb the conclusion reached by the Board with respect to public interest.

Conclusion

[74] For these reasons, the appeal must be dismissed.

Appeal heard on January 23, 2009

Reasons filed at Calgary, Alberta
this 5th day of May, 2009

“O’Brien J.A.”

O’Brien J.A.

“Hunt J.A.”

I concur:

Hunt J.A.

**Dissenting Reasons for Judgment of
the Honourable Madam Justice Conrad**

I. Introduction

[75] The critical issue in this appeal is whether the Alberta Energy and Utility Board (EUB) had jurisdiction to consider alternate corridors when determining whether to approve Montana Alberta Tie Ltd.'s (MATL) application to construct a for-profit 230-kV merchant international transmission line (IPL) through southern Alberta crossing the Montana border. The proposed line does not cross any other provincial boundary.

[76] This case involves the interpretation of the *NEB Act* as it relates to construction of an IPL. Here, the appellants are landowners who will be directly affected by the IPL. The EUB determined that it did not have jurisdiction to consider alternate corridors, by virtue of a condition in a permit issued by the National Energy Board (NEB). That decision leaves the appellants without a forum for an effective hearing relating to the determination of the appropriate corridor for the IPL – an issue of critical importance to them.

II. Issues

[77] Leave to appeal was granted on two issues:

- (a) Whether the EUB erred in its interpretation and application of the interplay of jurisdiction between the NEB and the EUB under the *NEB Act*, R.S.C. 1985, c. N-7 (*NEB Act*), particularly in relation to the selection of the location of an international power line; and
- (b) Whether the EUB erred in its interpretation and application of the public interest test, particularly in light of the “merchant nature” of the project.

III. Decision

[78] I would allow the appeal on the first ground. The EUB erred in finding it did not have jurisdiction to consider alternate corridors when dealing with MATL's application.

[79] In its decision granting the permit, the NEB interpreted the *NEB Act* and concluded that its authorization of the project was merely the first step in the approval process. After that, all of the matters described in section 58.19 of the *NEB Act*, including determining the proper corridor or location for the IPL, were to be dealt with by the designated provincial regulator applying provincial

law. I agree with the NEB's interpretation, and I would interpret paragraph 4 of the permit in a manner consistent with that decision. Although found under the "terms and conditions" portion of the permit, paragraph 4 is not really a condition. Rather, it is the permit itself – the NEB's authorization – which is subject to review by the EUB, in accordance with section 58.19, and is conditional upon the EUB's acceptance (section 58.21). To hold otherwise would mean that the permit, issued contemporaneously with the NEB's decision, would be in conflict with that decision.

[80] Even if paragraph 4, when read in conjunction with the paramountcy provision found in section 58.22 of the *NEB Act*, prevented the EUB from establishing the corridor, the EUB was still obliged to consider whether to reject or approve MATL's application, and was entitled to consider alternate corridors in arriving at its decision. Section 58.21 specifically confers the power and the obligation to refuse an application, even if the result of that decision means that the project cannot proceed. There is absolutely no conflict between paragraph 4 and the EUB's right to consider whether to approve the project as a whole. Moreover, a consideration of the public interest under provincial legislation would, in my view, necessarily involve consideration of whether the sought after objectives could be accomplished via an alternative corridor, which would cause significantly less interference with the public and the environment.

[81] Any other interpretation renders section 58.19, as it relates to determination of location, meaningless. While the EUB's determination of another corridor would require approval by way of amendment to the permit, I am satisfied that Parliament intended the Canadian public would be entitled to an effective hearing on this issue. I conclude, therefore, that paragraph 4 should not be read as impairing the EUB's ability to consider alternate corridors in choosing the proper location for the corridor in the same manner it would do for intra-provincial pipelines.

IV. Standard of Review

[82] I agree with my colleague, for the reasons expressed, that the standard of review is one of correctness.

V. Background

[83] My colleague has set out the facts, issues, and arguments in some detail and I do not propose to repeat all of the arguments and background contained in his judgment. Briefly stated, MATL applied to the NEB for a permit to build and operate a merchant single circuit 230-kV transmission line between Lethbridge, Alberta and Great Falls, Montana. This application evoked considerable opposition from those potentially affected by its construction, and that opposition took various forms. One objection related to whether there was a need for the line at all, and whether such a merchant line would be of any benefit to the citizens of Alberta. Those making this objection saw the line as a commercial venture designed to transport electricity to California where it would be offered for sale to the highest bidder – a purpose that did not justify interfering with either the property and private rights of Albertans, or the environment. Another major objection to MATL's

proposal, and the one with which this appeal is concerned, relates to the appropriate corridor for MATL's proposed IPL. Landowners living in or near the proposed corridor were concerned about issues of health, noise, the environment, interference with the use and enjoyment of private property, and the difficulties and dangers involved in locating a 230-kV line on irrigated lands. This latter issue was particularly acute, seeing as there appeared to be alternative corridors where the line could be built on primarily dry lands.

[84] Letters of opposition and a request that the NEB hold a public hearing were forwarded to the NEB. The NEB decided, however, not to recommend to the federal Minister that this matter proceed by certificate, which would have involved a public hearing before the NEB. As a result, it issued the permit applied for, without a public hearing, as it was mandated by statute to do. In its decision refusing to recommend the certificate process, the NEB stated that issues of most concern to many of the landowners – the determination of location and detailed route – would be dealt with by the provincial regulatory authority according to the laws of Alberta. The NEB stated in its decision:

The Board is aware that should it issue an IPL permit to MATL, the Board would not be the regulatory agency which determines many matters contained in landowner concerns submitted to the Board. Land acquisition, **as well as the determination of the location and of the detailed route of the proposed IPL**, would take place according to the laws of the Province of Alberta. (emphasis added)

[85] It is noteworthy that Alberta law provides for a public hearing on these issues and allows Alberta to designate the corridor, or refuse an application to construct the transmission line, where it is not satisfied with the corridors proposed.

[86] MATL had already applied to the EUB for permission to build the IPL and that process was delayed pending the NEB's decision on the permit. MATL's application to the EUB contained a section on alternative corridors and provided details with respect to its selection of the proposed corridor as required by EUB Directive 028. After the NEB issued its decision, the EUB issued notices of a public hearing and conducted such a hearing. Financial assistance was granted to the appellants who obtained Mr. Berrien, a recognized expert, to address the issue of corridor selection. He questioned the advisability of the IPL crossing irrigated property, as MATL proposed, and he suggested that crossing dry land would be preferable as it would avoid many of the recognized difficulties, and even some of the dangers, inherent in constructing a power line on irrigated property. As noted in the majority decision, there were other nearby corridors that could avoid much of the irrigated property.

[87] The EUB then issued its decision approving the line at MATL's proposed location, conditional on MATL's entering into further discussions with affected landowners. In its reasons, the EUB observed that this was the first time it had dealt with its delegated authority under the *NEB Act*. It also noted that ordinarily in an application before it to build a transmission line the

application would contain descriptions of the different corridors and/or specific routes in sufficient detail to allow the Board to “determine if the applied for route was an appropriate route for the transmission line when compared with other potentially viable routes for the line” [EUB’s decision 17]. While MATL had provided such information in its application, the EUB concluded, at 12 of its decision, that its jurisdiction in this case did not extend to considering alternative corridors because the NEB had already designated the corridor when it granted the permit. In taking this position the EUB was referring primarily to paragraph 4 of the permit which reads:

4. MATL shall cause the IPL to be designed, manufactured, located, constructed, installed and operated in accordance with those specifications, drawings, and other information or undertakings set forth in its application and in its related submissions.

[88] The appellant landowners appeal the EUB’s decision on this point. They submit the EUB has the delegated authority to consider alternative corridors, either as part of its duty under provincial law relating to intra-provincial power lines to consider the location and routing of corridors, or under its duty to consider the “public interest”. In the alternative, they argue that the EUB was entitled to consider alternative corridors in deciding whether or not to approve the preferred corridor set out in the permit. The appellants argue they have been deprived of an effective hearing on the critical issue of alternate corridors for the construction of the IPL, which they say is an especially egregious problem here, considering that the NEB expressly refused to put a condition in the permit regarding alternative corridors because the issue of location would be dealt with fully at the provincial level. The appellants urge an interpretation of the *NEB Act*, given the facts of this case, that would ensure a public hearing on location for the benefit of those who could be directly and adversely affected by the IPL.

VI. Analysis

A. **Issue One – Did the EUB err in its interpretation and application of the interplay of jurisdiction between the NEB and the EUB under the *NEB Act*, particularly in relation to the selection of the location of an international power line?**

1. **Scheme of the *NEB Act***

[89] To deal with this ground of appeal it is necessary to interpret and apply the *NEB Act* and determine how its various sections are intended to work together. Section 58.1 of the *NEB Act* prohibits construction or operation of an international power line without a permit issued under section 58.11, or a certificate issued under section 58.16. There are significant differences between these two processes.

(a) **the certificate process**

[90] An applicant seeking to construct and/or operate an IPL has the absolute right to elect to proceed by certificate. Section 58.23 of the *NEB Act* provides:

The applicant for or holder of a permit or certificate may file with the Board in the form prescribed by the regulations an election that the provisions of this Act referred to in section 58.27 and not the laws of a province described in section 56.19 apply in respect of the existing or proposed international power line.

[91] An election to proceed by certificate results in the applications of sections 58.23-58.27 of the *NEB Act* which are set out in the statute under the heading “Location and Construction Under Federal Law”. In particular, section 58.27 makes clear that the sections of the *NEB Act* requiring the NEB to hold a public hearing on international pipeline applications are applicable to applications to build an international transmission line. Thus, where an applicant elects the certificate process the NEB is required to conduct a public hearing into the merits of the application which allows affected parties to be heard.

[92] Even where an applicant does not elect the certificate process, however, the Governor in Council has the right, pursuant to section 58.15 of the *NEB Act*, to designate that the certificate process be used. Section 58.14 of the *NEB Act* requires the NEB to consider whether to make a recommendation to the Minister that such a designation be made. In deciding whether to recommend a certificate hearing, the NEB is obliged to consider a number of things, one being to consider whether a certificate process will result in unnecessary duplication of measures required by provincial regulatory authorities. Section 58.14(2) of the *NEB Act* provides, in part:

In determining whether to make a recommendation, the Board shall seek to avoid the duplication of measures taken in respect of the international power line by the applicant and the government of any province through which the line is to pass . . .

[93] To aid in the task of identifying provincial requirements, section 5 of the *National Energy Board Electricity Regulations*, SOR/97-130 (*Regulations*), requires an applicant to include the following in its application:

- (p) a description of the provincial requirements and associated review process that must be satisfied, including
 - (i) a description of the review process applicable to each approval that is required,
 - (ii) a description of any public consultation process provided for under the review process, and

- (iii) a schedule for the review process;
- (q) a description of the approvals that are required to be obtained, including a statement respecting the current status of the approvals,
 - (i) from all the provinces through which the international power line will pass, and
 - (ii) from the appropriate authorities for the construction or operation of the power line outside Canada;
- (r) a schedule showing the projected dates for
 - (i) each approval referred to in subparagraph (q)(i), and
 - (ii) the start and completion of construction of the international power line and the power line outside Canada;

[94] This information also gives the NEB an understanding of the extent to which the provincial regulatory process will protect the public and provide for public input. Overall, it assists the NEB in deciding whether it should deal with the various issues raised by the application, or whether they should be left to provincial regulators, applying provincial law, pursuant to sections 58.17-58.22 of the *NEB Act*.

(b) the permit process

[95] If neither the applicant nor the federal government opt for the certificate process, the NEB is obliged to issue the permit without a public hearing. Section 58.11(1) of the *NEB Act* reads:

Except in the case of an international power line designated by order of the Governor in Council under section 58.15 or in respect of which an election is made under section 58.23, the Board **shall**, on application to it and **without holding a public hearing, issue a permit authorizing the construction and operation of an international power line.** (emphasis added)

[96] Section 58.35(1) of the *NEB Act* permits the NEB to make the permit “subject to such terms and conditions respecting the matters prescribed by the regulations as the Board considers necessary or desirable in the public interest.” A further examination of the regulations shows that “location” is one of the matters that can be dealt with by including a term or condition in the permit.

[97] As alluded to above, when the permit process is adopted, the *NEB Act* makes the laws of a province, applicable to intra-provincial lines, applicable to the proposed IPL insofar as those laws

relate to the enumerated matters set out in section 58.19. These sections, which appear in the *NEB Act* under the heading “Location and Construction under Provincial Law”, read:

Location and Construction under Provincial Law
Provincial Regulatory Agency

58.17 The lieutenant governor in council of a province may designate as the provincial regulatory agency the lieutenant governor in council of the province, a provincial minister of the Crown or any other person or a board, commission or other tribunal.

Application

58.18 Sections 58.2 and 58.21 apply only in respect of those portions of international power lines that are within a province in which a provincial regulatory agency is designated under section 58.17 but do not apply in the case of international power lines in respect of which an election is filed under section 58.23.

Definition of provincial laws

58.19 For the purposes of sections 58.2, 58.21 and 58.22, a law of a province is in relation to lines for the transmission of electricity from a place in the province to another place in the province if the law is in relation to any of the following matters:

- (a) the determination of their location or detailed route;
- (b) the acquisition of land required for the purposes of those lines, including its acquisition by expropriation, the power to so acquire land and the procedure for so acquiring it;
- (c) assessments of their impact on the environment;
- (d) the protection of the environment against, and the mitigation of the effects on the environment of, those lines; or
- (e) their construction and operation and the procedure to be followed in abandoning their operation.

Application of provincial laws

58.2 The laws from time to time in force in a province in relation to lines for the transmission of electricity from a place in the province to another place in that province apply in respect of those portions of international power lines that are within that province.

Incorporation of provincial functions

58.21 A provincial regulatory agency designated under section 58.17 has, in respect of those portions of international power lines that are within that province, the powers and duties that it has under the laws of the province in respect of lines for the transmission of electricity from a place in the province to another place in that province, including a power or duty to refuse to approve any matter or thing for which the approval of the agency is required, **even though the result of the refusal is that the line cannot be constructed** or operated.

Paramountcy

58.22 Terms and conditions of permits and certificates and Acts of Parliament of general application are, for the purpose of applying the laws of a province under section 58.2 or 58.21, paramount to those laws. (emphasis added)

[98] There is no dispute that the EUB is the designated provincial regulatory agency delegated the authority under the *NEB Act* to apply provincial law dealing with intra-provincial power lines to the proposed IPL when the NEB issues a permit. Nor is there a constitutional challenge relating Parliament's jurisdiction to determine location of a line for that portion of an international transmission line that falls within Alberta. It follows that the EUB was acting as the federal government's delegate, and was entitled to apply provincial law to all of the matters enumerated in section 58.19, which includes determining the location and detailed route. The only question is whether the EUB erred in limiting its right to determine, or consider evidence, relating to alternate corridors in this case.

2. Could the EUB consider alternate corridors?

[99] I propose to deal, first, with the NEB's decision and the permit it issued as a result of that decision. The NEB stated unequivocally in its decision that the EUB would be able to consider alternate corridors – even to the point of determining the appropriate location for the IPL. In discussing the permit process, in its written decision choosing not to recommend the certificate process, the NEB observed that the effect of granting a permit would be that the matters set out in section 58.19 of the *NEB Act* would be dealt with according to provincial law. It stated:

MATL has not filed an election under section 58.23 of the NEB Act requesting that certain provisions of the NEB Act, rather than certain provincial laws, apply with respect to the proposed IPL. As a result, **if the Board issues MATL an authorization to construct and operate the proposed IPL, then under section 58.19 and 58.2 of the NEB Act, provincial laws for electric transmission lines related to any of the following matters will apply to portions of the IPL that are within Alberta:**

- (a) the determination of their location or detailed route;
- (b) the acquisition of land required for the purposes of those lines, including its acquisition by expropriation, the power to so acquire land and the procedure for so acquiring it;
- (c) assessments of their impact on the environment;
- (d) the protection of the environment against, and the mitigation of the effects on the environment of, those lines; or
- (e) their construction and operation and the procedure to be followed in abandoning their operation. (emphasis added)

[100] True to this interpretation of the law, the NEB noted later in its decision that it had received a request from Van Giessen Growers Inc., and Mr. Van Giessen, asking it to impose a condition requiring MATL to “use an alternate route should impacts on individual land owners and their agricultural operations be significant”. The NEB decided not to grant this request, in part because the landowners’ concern about the corridor would be dealt with by the EUB. The NEB stated in its decision:

[W]ith respect to the condition proposed by Van Giessen Growers, the Board has assessed the significance of impacts of the proposed IPL. Many of the landowner concerns are discussed in Section 5.3 of the Environmental Screening Report which outlines mitigation options MATL has committed to using. The Board has also taken landowner concerns into consideration under the NEB Act. **The Board is aware that should it issue an IPL permit to MATL, the Board would not be the regulatory agency which determines many matters contained in landowner concerns submitted to the Board. Land acquisition, as well as the determination of the location and of the detailed route of the proposed IPL, would take place according to the laws of the Province of Alberta.** However, within the general corridor which is the subject of the application before the Board, the

Board is satisfied with MATL's proposed mitigation options to address landowner concerns. (emphasis added)

[101] The reference to mitigation in this passage does not contradict the NEB's conclusion that the provincial regulator would be choosing the location and detailed route. In referring to mitigation, the NEB was simply saying, on the material before it, that should the EUB confirm MATL's preferred corridor mitigation was possible. In this regard, it is important to understand that for a landowner affected by the chosen corridor, mitigation is not synonymous with having no power line at all. In my view, the closing sentence in the paragraph above does not, in any way, detract from the previous sentence wherein the NEB decided that the EUB would determine location.

[102] I would read the permit issued at the same time as the NEB's decision, in such a manner as to avoid a conflict between the decision and the permit. The NEB refused to deal with the request for a condition dealing with alternate corridors and assured landowners that they would be able to air their concerns about corridor selection to the EUB. MATL argues that notwithstanding these comments, the NEB's inclusion of paragraph 4 in the permit has exactly the opposite effect. I find it incomprehensible that the NEB would take the deliberate step of contradicting its own reasons, thereby thwarting the efforts of landowners to express their concerns about the proposed corridor, by imposing a condition in the permit that would have the effect, through the operation of section 58.22 of the *NEB Act*, of taking this right away.

[103] In my view, that is not what the NEB intended by its insertion of paragraph 4 in the permit – nor did Parliament intend these sections to be so employed to take away a right to an effective hearing on this important issue. To interpret paragraph 4 in that manner would not only create a conflict between the permit and the decision, but also between future permits and those provisions in the *NEB Act* which, as the NEB acknowledged, require the application of provincial laws to determine corridor and route when the permit process is being followed. That is because a permit will always issue for a location and, if that fact deprives the public from a hearing on location, section 58.19, as it relates to location, is meaningless.

[104] I prefer to read the permit, including paragraph 4, in a way that avoids these difficulties. Paragraph 4 reads:

MATL shall cause the IPL to be designed, manufactured, located, constructed, installed and operated in accordance with those specifications, drawings, and other information or undertakings set forth in its application and in its related submissions.

[105] Although paragraph 4 appears under the guise of terms and conditions, in my view it is not a condition of the permit – it is the permit itself. The NEB was merely saying here: “Your plans, as described in your application, are okay with us – now take the matter to the EUB and ask it to consider all of the enumerated matters in section 58.19, including the determination of location and

detailed route.” Paragraph 4 is nothing more than the NEB’s “authorization to construct and operate the proposed IPL,” to use the NEB’s own words in describing the effect of granting the permit. As the NEB also noted in its decision, this authorization only means that the process has been delegated by statute to the provincial regulator to apply provincial law in relation to the matters set out in section 58.19 of the *NEB Act*. Thus, although a permit issues – it is not effective immediately and must pass through this delegated provincial process. In short, the entire permit is conditional upon the EUB’s application of Alberta laws to the enumerated subjects.

[106] I come to this conclusion for several reasons. To start with, there is nothing in the specific wording of the paragraph that purports to oust the EUB’s jurisdiction to deal with the matters enumerated in section 58.19 of the *NEB Act*, which includes determination of location. Indeed, the NEB’s decision leading up to the issuance of the permit suggests the opposite, and it is preferable to adopt an interpretation of the meaning and effect of an alleged condition that is in harmony with the NEB’s reasons for granting the permit.

[107] Second, paragraph 4 is entirely unlike any of the remaining terms and conditions listed in the permit. It is a broadly worded statement approving the application, rather than one that imposes a limitation or condition. Whereas the other alleged conditions require MATL to do certain things, if and when it proceeds with the project, paragraph 4 simply gives MATL permission to proceed in accordance with the proposal filed. As the NEB noted in its decision, that permission is conditional on EUB approval.

[108] Third, to adopt the interpretation advanced by the respondents, and applied by the EUB, would mean that the EUB could not review and apply provincial law relating to the design, manufacture, location, construction, installation and operation of the IPL. That is because the *Regulations* also give the NEB the authority to impose conditions relating to, among other things, “the electrical and physical characteristics...of the facilities” and “requirements respecting monitoring of the construction, operation and the environmental effects of the facilities” (subsections 6(d) and 6(f)). Little would be left for the provincial regulator to consider, short of issues relating to land acquisition, and the ability, as will be discussed later, to give ultimate approval to the project. The respondents’ interpretation would gut the statute of meaning, and would deny affected landowners in cases, such as this one, the protection of a hearing on the bulk of the issues enumerated in section 58.19. Neither Parliament in enacting the *NEB Act*, nor the NEB panel in its decision, intended this to happen.

[109] Fourth, if paragraph 4 is read in the manner proposed by the respondents, the NEB would be guilty of an unreasonable exercise of the discretion conferred on it to impose terms and conditions under section 58.35(1) of the *NEB Act*. This section reads:

58.35(1) The Board may, on the issuance of a permit, make the permit subject to such terms and conditions respecting the matters prescribed by the

regulations as the Board considers necessary or desirable in the public interest.

[110] If paragraph 4 was intended to limit the EUB’s right to consider “location”, I fail to see how such a limitation could be “necessary or desirable in the public interest”. That is because it would contradict the NEB’s own decision giving the express power to the provincial regulator to consider this issue under section 58.19 of the *NEB Act*. Nor do I see how such a step could be in the public interest when the NEB had already assured concerned members of the “public” that determination of location and detailed route would be performed according to Alberta provincial laws. Thus, if paragraph 4 is interpreted in the manner proposed by the respondents, the NEB would be acting outside of the discretion given to it by Parliament to add terms and conditions to the permit.¹ I prefer an interpretation of paragraph 4 that assumes the NEB intended to act within its delegated authority.

[111] Fifth, and apart from the need to reconcile the NEB’s decision with the permit, the interpretation of paragraph 4, urged on the court by the respondents, does not accord with the Parliamentary intention inherent in the *NEB Act*. To start, it would render the words “determination of location...” found in section 58.19 of the *NEB Act*, completely meaningless. Section 58.19 contemplates that the provincial regulator will, in the ordinary course, apply its laws with respect to location, even to the point, in the appropriate case, of determining the appropriate corridor. To adopt the conclusion that a statement such as paragraph 4, authorizing the project as proposed, is a condition ousting the jurisdiction of the provincial regulator to consider alternate corridors, would eviscerate any authority given to the regulator under sections 58.19-58.20, and would require the conclusion that Parliament intended that a project simply proceed, when the NEB issues a permit, even though the provincial regulator has not yet become involved. Such an interpretation would lead to the conclusion that the provincial regulator is to hold a public hearing on the matters enumerated in 58.19 when all it can do is “rubber stamp” the permit.

[112] Furthermore, I am satisfied that when it passed the *NEB Act*, Parliament intended to give Canadians an effective means to protect themselves when dealing with international pipelines and powerlines. The *NEB Act* provides for public hearings for all pipeline applications, and it also provides for public hearings for transmission lines where the certificate process is elected or designated. The *Regulations* require an applicant for a permit to supply extensive information on the provincial regulatory process. In my view, this is to assist the NEB to avoid possible duplication, and to ensure that there is a process for public involvement should it choose not to proceed by way of certificate. In my view, Parliament intended that the public would have the protection of a public hearing when there is an application to build an IPL. It is difficult to assume, therefore, that Parliament intended the public would have less protection when a permit issues, especially having

¹ “It is obvious that a delegate can only acquire jurisdiction to do the type of activity authorized by the statute, and any other activity will be *ultra vires*”. (David Phillip Jones and Anne S. de Villars, *Principles of Administrative Law*, 4th ed. (Toronto: Thomson Canada Limited) at 148.)

regard to the fact that powerlines are above ground and continue to cause interference long after construction. In my view, the object of the delegation was in large part to avoid duplication of process, and it was never intended that by inserting conditions in a permit the public would be deprived of a hearing on the issues set out in section 58.19.

[113] Sixth, in interpreting the intended scope of paragraph 4, it is necessary to take the general context into account. The NEB was aware that the parties were concerned about a corridor going through irrigated lands when, a few miles away, a corridor could cross mainly cultivated or dry lands. MATL's proposed corridor was only two kilometres in width, and any variation within that corridor would be meaningless to these appellants. Thus, when the NEB refused Van Guissen's request for a condition in the permit allowing for corridor variation, on the basis that the EUB would be dealing with the issue of location according to provincial laws, it could not have intended that the right to be heard on this important issue would be simultaneously extinguished by a term in the permit. Corridor is perhaps the single most important issue affecting members of the public whose real estate and way of life are threatened by a transmission line, and Parliament intended, and the NEB determined, that the power to determine the corridor was delegated to the provincial regulator when the NEB issues a permit. I would interpret narrowly any condition in a permit that would have the effect of taking this delegated power away.

[114] Finally, although it was not argued, and it is unnecessary to my decision, the inclusion of the word "location" in the regulation designating matters which can be made a condition of a permit arguably runs counter to the *NEB Act*, in which case it would be *ultra vires*.² The insertion of a location as a condition to which paramountcy applies, pursuant to section 58.22, in effect defeats the protection afforded by the delegation of location to the provincial regulatory agency, and renders meaningless section 58.19 as it relates to location. Arguably, Parliament did not intend that the power to regulate would be broad enough to include determining location. However, as this was not argued, I will say nothing further about it.

[115] It was argued that the use of the word "or" in the phrase "determination of the location or detailed route" in section 58.19(a) meant that a designated provincial regulator could only consider one subject or the other, and that it was not a guarantee of a right to have the provincial agency consider both. I reject that argument, as did the NEB when it refused to insert a condition about alternate corridors at Mr. Van Giessen's request. The NEB noted that the issues of "location **and** detailed route" would be dealt with by applying provincial law. In my view, the inclusion of the word "or" as opposed to "and", was not intended to limit the delegation. Rather, I would read the use of the word "or" as simply referring to laws relating to either location or detailed route, or cases which were concerned with either location or detailed route. Where there are laws of the province applying to either or both location or route, all those laws apply. I am also satisfied that the meaning of the words "location" and "detailed route," as they appear in section 58.19 of the *NEB Act*, and

² *Ibid.* at 126, para. (f).

as they are used in the NEB's decision, refer to the corridor through which the power line will run, and the specific route within that corridor. Indeed, the respondent Naturener acknowledges this to be the case.

[116] Even if paragraph 4, combined with section 58.22, prohibits the EUB from determining an alternate corridor to that contained in the permit, it does not prohibit the consideration of alternate corridors when deciding whether to grant or refuse the application. Under the *NEB Act*, the EUB is required to apply provincial laws as they relate to the enumerated matters in section 58.19 – as if the application before it involved construction of an intra-provincial transmission line. This involves conducting a hearing and applying laws dealing with the determination of location in the same manner as for intra-provincial power lines. Alberta law dealing with location and detailed route allows the EUB to either designate the corridor, having reviewed the various alternatives, or simply refuse the application altogether where the corridors are not deemed appropriate. Thus, even if paragraph 4 prohibits a designation of a different corridor, it does not limit the EUB's ability to consider alternate corridors when deciding whether to refuse or grant approval to MATL's application.

[117] This interpretation is borne out by the breadth of the delegation of power, and duty to apply provincial laws where necessary “even if it means that the line cannot be constructed or operated” (section 58.21). This demonstrates Parliament's intention that, at the very least, the provincial regulator will have the final say about whether, after consideration of all the laws relating to the enumerated matters in section 58.19, the IPL should be built at all at the proposed location. Nothing in the wording of paragraph 4 suggests that the NEB was taking away the EUB's ability to approve the project. While the paramountcy provision in section 58.22 might mean that the province could not designate a different location, this does not mean it could not consider whether to approve construction of the transmission line at MATL's preferred location. If the EUB were to deem that the same goals could be accomplished on an alternate corridor, with far less harm to the public, the EUB has the right, and the duty, to refuse the application. MATL could then, if it chose to do so, simply apply to the NEB to change the permit to include a new corridor location.

[118] Finally, although comments made in the House of Commons when legislation is debated are not necessarily reflected in the eventual enactment, the views of the government at the time the *NEB Act* was amended in 1990 are instructive. My colleague included part of the remarks of The Hon. Jean J. Charest found in *Hansard*; the following remarks were also made by the Honourable Minister, after noting the difficulty of federalism and the duplication that arises:

These facts suggest that the Government of Canada should design a system for regulating electricity exports that will function by exception. Where provincial regulation is sufficient to protect the Canadian public interest, federal regulation is not warranted; where provincial regulation is insufficient, the federal Government must have the full authority to act. In other words, the National Energy Board should complement and not

duplicate measures taken by provincial Governments. This is the basic principle underlying the amendments contained in this Bill: *House of Commons Debates*, No 34 June 26, 1989 at 3583.

....

[119] The amendments to the *NEB Act* were designed to avoid duplication – not to avoid an effective hearing on the delegated issues. Thus, even if the NEB can remove certain matters from the provincial regulator’s consideration, by issuing a condition, this power should be read narrowly so as not to deny the public the opportunity, at some level, to be heard. The NEB’s intention of removing a matter from the EUB should be demonstrably clear, which is not the case here. I note further, that even if my colleague is correct, and Parliament intended that the NEB would have the final say on corridor selection, that will always be the case. The provincial regulator has not been given the power to amend the permit. It follows that if the EUB chose another corridor or refused the application, MATL would have to return to the NEB to get approval of a new corridor in the permit, or make a new application for a different corridor.

[120] In this case, the NEB performed its statutory obligation, required at the front end of the permit process, by not recommending the certification process and issuing the permit. This brought sections 58.17-58.22 of the *NEB Act* into play which meant that the EUB was obliged to conduct a hearing, and to apply provincial laws relating to the matters set out in section 58.19 of the *NEB Act*. These laws included the right to grant or refuse applications on the basis of location which in turn included the right to consider alternate corridors. In the end, the power to approve the IPL at any location, including MATL’s preferred location, had been delegated to the EUB. Even if it could not designate another corridor, it could refuse the project – and in determining whether to do so it could consider alternate corridors.

[121] There are two other issues I must address. It was argued that the appellants had the benefit of a hearing when the NEB performed its environmental screening under the *Canadian Environmental Protection Act, 1999*, S.C. 1999, c. 33 (*CEPA*). I disagree. The *CEPA* was enacted after the *NEB Act*, and while it does provide for hearings relating to many overlapping matters, the purpose of the screening relates to the environmental impact of the proposed corridor. Thus, when the NEB performed its screening process here, it was not examining alternate corridors for the purpose of determining whether both private and public interests could be better served at another corridor location. This was not the type of investigation that would have answered the appellants’ concerns. Moreover, while MATL changed its corridor selection after its initial application, that was solely for environmental purposes because it recognized that its first choice would not pass the environmental screening.

[122] I also note that when the *CEPA* was enacted, the *NEB Act* was not amended to delete any of the considerations in section 58.19 when the permit process is adopted. Moreover, if, as a result of the *CEPA*, unanticipated duplication now arises because of the environmental screening, which removes some of the need to avoid duplication at the provincial level, the way to deal with that is

by amending the *NEB Act*, where the issue of process can be addressed. It is not to be done by denying these appellants a hearing that the NEB said they were to have.

[123] Similarly, any argument that the appellants had a paper hearing at the NEB, when it determined not to proceed by certificate, is offset by the NEB's decision based on that paper, which specifically provided that the issue of location would be dealt with further by the EUB.

[124] Finally, even if the NEB, by inserting paragraph 4 in the permit, took all consideration of alternate corridors away from the EUB, there is an operational conflict between what the NEB said, and what it did. Having been assured by the NEB that it was unnecessary to impose a condition requiring consideration of an alternative corridor – because the issue of location would be decided by the EUB – the appellants could not rationally conclude that paragraph 4 was invested with a meaning that would take this right away. They were entitled to believe that the NEB meant what it said and was not giving with one hand while taking with the other. In my view, the appellants should be entitled to approach the NEB and ask it to rectify paragraph 4 to accord with its decision.

[125] In conclusion, I find the EUB erred in finding that the permit precluded consideration of alternate corridors when performing its delegated duty to deal with corridor location. It had an obligation to fully consider this matter, and could determine the most appropriate corridor, even if it could not amend the permit. In any event, it certainly had the right to refuse the application, based on the corridor selected, if that corridor was not deemed appropriate having regard to alternate corridors available. I would allow the appeal and remit the matter to the EUB to apply the laws of the province to determine location and detailed route.

B. Issue Two – Did the EUB err in its interpretation and application of the public interest test, particularly in light of the “merchant nature” of the project?

[126] Given my decision on the first ground of appeal, and the need to determine alternate routes with a view to designating a new one or refusing the present one, it is unnecessary to discuss whether the EUB erred in its interpretation and application of the public interest test.

VII. Conclusion

[127] The EUB had the right and the duty to consider all issues relating to location that it could consider with respect to an intra-provincial transmission line – including the right to choose the corridor, or refuse the application on the basis of the chosen corridor. The NEB's decision affirmed that, and I would read the authorization in paragraph 4 of the permit as nothing more than the issuance of the permit, which was conditional upon provincial consideration of all enumerated matters including corridor.

[128] I would allow the appeal and direct that the matter be returned to the EUB to reconsider MATL's application on the basis of these findings. In view of my decision that the NEB did not take consideration of alternate corridors away from the EUB, it is unnecessary to determine whether the EUB erred in the application of the public interest test because it will be required to reconsider this matter in any event.

Appeal heard on January 23, 2009

Reasons filed at Calgary, Alberta
this 5th day of May, 2009

“Conrad J.A.”

Conrad J.A.

Appearances:

S. C. Stenbeck
for the Appellants Sincennes et al.

G.D. Perkins
for the Respondent Alberta Utilities Commission

T. P. O'Leary and A.L. McLarty, Q.C.
for the Respondent Montana Alberta Tie Ltd.

P. R. Jeffrey
for the Respondents Naturener Energy Canada Inc. and Naturener USA LLC

D. F. Bur
for the Intervener

Corrigendum of the Reasons for Judgment Reserved

On the signature page, the date of hearing has been corrected to read January 23, 2009.

Corrigendum of the Reasons for Judgment Reserved

On page 18 of the judgment, the date of hearing has been corrected to read January 23, 2009.

TAB 3



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**BRITISH COLUMBIA
UTILITIES COMMISSION**

**ORDER
NUMBER G-31-13**

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IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

An Application by Cal-Gas Inc.
for Approval of an Increase to Propane Rates at the Kicking Horse Mountain Resort

BEFORE: R.D. Revel, Commissioner

March 7, 2013

O R D E R

WHEREAS:

- A. By Order C-16-01 dated November 12, 2001, the British Columbia Utilities Commission (Commission) approved a Certificate of Public Convenience and Necessity (CPCN) for Cal-Gas Inc. (Cal-Gas) to construct and operate an underground propane grid system at the Kicking Horse Mountain Resort (KHMR or the Resort) near Golden, British Columbia;
- B. By Order C-19-06 dated October 26, 2006, the Commission issued a CPCN that expanded the area at the Resort to be served by the propane grid system, and approved an Amended Agreement with Kicking Horse Mountain Development Corporation and Terms and Conditions of Service and Rate Schedules for the Resort;
- C. By letter dated October 3, 2012, Cal-Gas applied to the Commission for approval to increase the variable delivery component of propane rates for customers at KHMR by \$0.0241 per litre and charge a fixed administration fee of \$14.00 per monthly invoice (the Application). The requested effective date is December 1, 2012;
- D. Cal-Gas provided a customer notice of the Application and the requested rate increase to all propane customers at KHMR by way of a letter dated October 4, 2012;
- E. By Order G-153-12A dated October 18, 2012, the Commission established a Written Hearing process for review of the Application and a Regulatory Timetable for submissions;
- F. By Order G-164-12 dated November 1, 2012, the Commission established an amended Regulatory Timetable in order to allow additional time for Intervener and Interested Party registration and submissions;
- G. By letter dated January 16, 2013, Cal-Gas requested approval to withdraw the sections of Exhibit B-1-1 that pertain to the proposed fixed monthly \$14 administration fee, pursuant to section 88.1 of the *Utilities Commission Act* (Cal-Gas Letter);

**BRITISH COLUMBIA
UTILITIES COMMISSION**

**ORDER
NUMBER G-31-13**

2

- H. By Order G-10-13 dated January 17, 2013, the Commission established an amended Regulatory Timetable in order to allow for Intervener comments on the Cal-Gas Letter;
- I. Having received no objections from Interveners, the Commission dismissed the Cal-Gas request for an Administration Fee from the proceeding by Order G-22-13, dated February 7, 2013;
- J. Final and Reply Submissions were made by February 22, 2013 in accordance with the amended Regulatory Timetable;
- K. The Commission has considered the Application, the evidence and the submissions, all as set forth in the Reasons accompanying this Order.

NOW THEREFORE pursuant to section 60 and 61 of the *Utilities Commission Act*, the Commission orders as follows:

1. The Cal-Gas request for approval of the proposed delivery rate increase of \$0.0241 per litre for propane customers at KHMR is approved on a permanent basis, effective December 1, 2012.
2. Cal-Gas is directed to recover the difference between the interim and permanent delivery rate for the period December 1, 2012 to March 31, 2013 by way of a rate rider over a twelve month period commencing April 1, 2013. Cal-Gas is directed to file the detailed calculation of the proposed rate rider with the Commission for approval within 30 days of this Order.
3. Cal-Gas is directed to file amended and up to date tariff pages and General Terms and Conditions in accordance with this Order, within 30 days of this Order.
4. Cal-Gas is directed to file the Operating Agreement dated August 1, 2007 between Cal-Gas and Kicking Horse Mountain Resort Limited Partnership within 30 days of this Order for approval by the Commission.
5. Cal-Gas is directed to file with the Commission a rate design study cost assessment, within 90 days of this Order. The cost assessment should detail the expected costs to perform a rate design study that addresses the rate design issues listed in Section 9.3 of the Reasons accompanying this Order.

DATED at the City of Vancouver, in the Province of British Columbia, this 7th of March 2013.

BY ORDER

Original signed by:

R.D. Revel
Commissioner

Cal-Gas Inc.
Application for Approval of an Increase to Propane Rates
at the Kicking Horse Mountain Resort

REASONS FOR DECISION

1.0 BACKGROUND

By Order C-16-01 dated November 12, 2001, the British Columbia Utilities Commission (Commission) approved a Certificate of Public Convenience and Necessity (CPCN) for Cal-Gas Inc. (Cal-Gas) to construct and operate an underground propane grid system at the Kicking Horse Mountain Resort (KHMR) near Golden, British Columbia. By Order C-19-06 dated October 26, 2006, the Commission issued a CPCN that expanded the area at the Resort to be served by the propane grid system, and approved an Amended Agreement with Kicking Horse Mountain Development Corporation and Terms and Conditions of Service and Rate Schedules for KHMR.

As of September 30, 2012, Cal-Gas had 128 metered propane customers at KHMR. (Exhibit B-8, BCUC IR 2.8.2) The existing Cal-Gas propane rate structure for customers at KHMR is comprised of the following four components:

1. Propane commodity price – Based on the preceding month’s weighted average posted propane price at the Shell Jumping Pound refinery;
2. Primary Freight;
3. Secondary Freight;
4. Operating Margin.

The primary freight, secondary freight and operating margin component of rates amount to the total delivery rate. The last delivery rate increase for Cal-Gas customers at KHMR was approved by Commission Order G-60-08, dated March 27, 2008.

2.0 THE APPLICATION

On October 3, 2012, Cal-Gas applied to the Commission for approval to increase the primary freight, secondary freight and operating margin components of propane rates for customers at KHMR by \$0.0241 per litre and charge a fixed monthly administration fee of \$14.00 (Administration Fee), effective November 1, 2012 (Original Application). Subsequently, Cal-Gas filed an amendment to the Original Application, which revised only the requested effective date from November 1, 2012 to December 1, 2012 (Application).

The following table summarizes the current and proposed rate per litre for each delivery rate component.

Delivery Rate Component	2008 Approved (Order G-60-08)	2012 Proposed (Exhibit B-1-1)	Proposed \$ Increase	Proposed % Increase
Primary Freight (\$ per litre)	\$ 0.0202	\$ 0.0285	\$ 0.0083	41%
Secondary Freight (\$ per litre)	\$ 0.0191	\$ 0.0266	\$ 0.0075	39%
Operating Margin (\$ per litre)	\$ 0.0642	\$ 0.0725	\$ 0.0083	13%
Total (\$ per litre)	\$ 0.1035	\$ 0.1276	\$ 0.0241	23%

The primary freight component of delivery rates recovers the cost of transporting propane from the refinery to the Golden branch. The secondary freight component of delivery rates recovers the cost of transporting propane from the Golden branch to customers at KHMR, including labour, fuel and vehicle repairs and maintenance. Lastly, the operating margin component of rates is intended to recover the overhead cost at the Cal-Gas Golden branch, head

office, depreciation and remaining operational costs and does not include a return on equity or a return on Cal Gas' property at KHMR.

Cal-Gas does not propose a change to the commodity rate in the Application, which is currently calculated as the preceding month's weighted average posted propane price at the Shell Jumping Pound refinery, as approved by Commission Order G-60-08.

3.0 THE WRITTEN HEARING PROCESS

Commission Order G-153-12A dated October 18, 2012, established a written hearing process for review of the Application and a regulatory timetable for submissions. Subsequently, the Commission received correspondence from several Cal-Gas customers objecting to the requested rate increase and the deadline for registration of Interveners and Interested Parties set by Order G-153-12A. Accordingly, Commission Order G-164-12 dated November 1, 2012, established an amended regulatory timetable in order to allow additional time for Intervener and Interested Party registration and submissions.

4.0 PARTICIPANTS IN THE WRITTEN HEARING PROCESS

Seven Interveners and two Interested Parties registered in this proceeding. All registrants are individual residents at KHMR that are affected by the Application. Mr. Alan Shragie, an Intervener, actively participated throughout the proceeding by filing two rounds of Information Requests to Cal-Gas, as well as other submissions. The participation of the remaining six Interveners was limited to comments filed at the outset of the proceeding. The Commission also received several Letters of Comment from individual residents at KHMR affected by the Application.

5.0 ADMINISTRATION FEE

The Commission received objections to the Administration Fee from six Interveners, two Interested Parties and in each Letter of Comment. Following two rounds of Information Requests from Commission Staff and one Intervener, Cal-Gas requested approval to withdraw the sections of the Application that pertain to the Administration Fee. By Order G-10-13 dated January 17, 2013, the Commission established an amended Regulatory Timetable in order to allow for Intervener comments on the Cal-Gas request.

Having received no objections from Interveners, the Commission dismissed the request for an Administration Fee from the proceeding by Order G-22-13 dated February 7, 2013.

6.0 THE INTRODUCTION OF NEW EVIDENCE THROUGH FINAL SUBMISSIONS

The Panel finds that new information was introduced through Final Submissions in this proceeding. The deadline for evidence to be submitted was January 30, 2013, pursuant to Order G-10-13. The Commission did not receive requests to extend the deadline for evidence. Final Submissions may not contain any new information and may only refer to evidence on the record. Specifically, Mr. Shragie introduced new information related to the following topics in his Intervener Reply to Cal-Gas Final Argument Submissions:

- The cost for other suppliers to provide propane to customers at KHMR;
- Aspens strata project;
- Discussions with the resort developer regarding the placement of meters; and
- Distribution charges.

In response, Cal-Gas also introduced new information in their Reply Submission. These references and citations introduced in Final Submissions for this proceeding are not in evidence on the record and, therefore not tested through Information Requests. **For this reason, the Panel determines that it will give no weight to any new information introduced in Final Submissions that is not on the evidentiary record.**

7.0 DELIVERY COMPONENT OF RATES – REQUESTED RATE INCREASE

7.1 Cal-Gas Submissions

Cal-Gas requests Commission approval in the Application to increase the primary freight, secondary freight and operating margin components of the delivery rate for customers at KHMR by \$0.0241 per litre. Cal-Gas submits in the Application that the “requested increase in [the delivery rate] is moderate considering no increase has been applied for in 4 years.” (Exhibit B-1-1)

Cal-Gas submits that the total revenue deficiency at existing delivery rates is \$50,299 for 2013 (Forecast) and \$54,102 for 2012 (Actual). (Exhibit B-8, BCUC IR 2.12.1) The total revenue deficiency using the delivery rates requested in the Application for 2013 (Forecast) is \$42,505. (Exhibit B-8, BCUC IR 2.13.1) These calculated revenue deficiencies do not include any return on equity or a return on Cal-Gas’ property at KHMR in the cost of service.

By letter dated February 14, 2013, Cal-Gas filed an amended response to BCUC IR 2.6.2.1-2.6.3 that reduced the 2013 (Forecast) depreciation expense by \$6,513 from \$25,979 to \$19,466 (Exhibit B-8-4), thereby reducing the total revenue deficiency for 2013 (Forecast) to \$43,786 at existing delivery rates, and to \$35,992 using the delivery rates requested in the Application.

7.2 Intervener Submissions

Mr. Shragie submits that the Commission should not approve the delivery rate increase requested in the Application. Specifically, he argues that “The Commission should totally reject Cal Gas’s application for any rate increase until such time that it provides an independent audit of all its relevant costs, revenues, allocations and other figures as many of its figures submitted originally and in its Responses to the Commission’s first and Second Information Requests reflected errors.” (Shragie Final Submission Reply)

Mr. Shragie gives several reasons for this conclusion, including that the requested rate increase is not supported by evidence and that “The economic burden of the slow expansion of the Resort should fall upon the shareholders of Cal Gas Inc and not the ratepayers.” (Shragie Final Submission Reply)

7.3 Comparable Delivery Rates

Exhibit A-10 includes the following summary of delivery rates for Panorama Division propane customers of Corix Multi-Utility Services Inc. (Corix), effective January 1, 2013:

	Residential	Small Commercial	Large Commercial
Panorama			
Basic Charge	15	25	100
Delivery Charge (GJ)	\$ 5.75	\$ 5.75	\$ 5.75

Using a conversion factor of 1 gigajoule (GJ) to 39.071657 litres¹, the delivery charge per litre for Panorama Division propane customers of Corix is as follows:

	Residential	Small Commercial	Large Commercial
Panorama			
Basic Charge	15	25	100
Delivery Charge (GJ)	\$ 5.75	\$ 5.75	\$ 5.75
Conversion Factor	39.071657	39.071657	39.071657
Delivery Charge (Litres)	\$ 0.15	\$ 0.15	\$ 0.15

In the Panel’s view, the delivery rates for Panorama Division propane customers of Corix of \$5.75 per gigajoule or \$0.15 per litre provide context for Cal-Gas’ current and requested delivery rates for customers at KHMR of \$.1035 per litre and \$0.1276 per litre, respectively.

7.4 Average Bill Impact

Cal-Gas has not provided information regarding the average bill impact of the requested rate increase; however, the Panel has taken into account examples of monthly consumption submitted as evidence in this proceeding by Cal-Gas customers at KHMR. For example:

- Ms. Wenche Sharp, an Intervener, submits in Exhibit C-4-2 that “Our usage is averaging 10 liter per month”. The delivery rate increase requested in the Application would therefore result in an average monthly bill increase of \$0.24 (10 litres multiplied by the requested delivery rate increase of \$0.0241) for those months where the customer is not subject to the minimum monthly charge of \$25.
- Ms. Melanie Sicotte submits in Exhibit E-2, a Letter of Comment, that: “The most propane we have used in 2012 is 31.26L...” The delivery rate increase requested in the Application would therefore result in a maximum monthly bill increase of \$0.75 (31.26 litres multiplied by the requested delivery rate increase of \$0.0241) for those months where the customer is not subject to the minimum monthly charge of \$25.

The Panel is aware that Cal-Gas customers at KHMR are subject to a minimum monthly charge of \$25. Therefore, for those months where less than \$25 worth of propane is consumed, the delivery rate increase requested in the Application would have minimal or no impact. The Panel has further considered the minimum monthly charge in the context of overall rate design in Section 9.0 below.

7.5 Commission Determination

While it is the owner of the propane grid system at KHMR, Cal-Gas accepts responsibility as a public utility, pursuant to the *Utilities Commission Act* (Act). With respect to discrimination in rates for a public utility, section 59 (5) of the Act notes the following:

“... a rate is “unjust” or “unreasonable” if the rate is

- (a) More than a fair and reasonable charge for service of the nature and quality provided by the utility,
- (b) Insufficient to yield a fair and reasonable compensation for the service provided by the utility, or a fair and reasonable return on the appraised value of its property, or
- (c) Unjust or unreasonable for any other reason.”

The Panel has examined all submissions in this proceeding, in addition to Cal-Gas’ historical costs for each delivery rate component, as reported in the Annual Reports for Kicking Horse Operations that are submitted to the

¹ http://www.sbr.gov.bc.ca/documents_library/shared_documents/Conversion_Factors.pdf

Commission annually. In the Panel's view, it is evident that Cal-Gas has not historically recovered its cost of service for operations at KHMR, nor does the delivery rate increase requested in the Application permit Cal-Gas to fully recover the forecast cost of service for operations at KHMR. It is important to note that the historical and forecast cost of service does not include any return on equity or a return on Cal-Gas' property at KHMR. **Accordingly, the Panel is of the view that the current delivery rate, and the requested delivery rate, do not result in a delivery rate that is more than a fair and reasonable charge. Cal-Gas has requested a rate that provides less than a fair and reasonable compensation for the service provided by Cal-Gas to customers at KHMR.** Primary consideration has been given to this in making a determination on the delivery rate increase requested in the Application.

The Panel has reviewed all submissions and considers that approval of the requested delivery rate increase of \$0.0241 per litre for propane customers at KHMR is warranted. The delivery rate of \$0.1276 per litre is approved on a permanent basis, effective December 1, 2012.

Cal-Gas is directed to recover the difference between the interim and permanent delivery rate for the period December 1, 2012 to March 31, 2013, by way of a rate rider over a twelve month period commencing April 1, 2013. Cal-Gas must file the detailed calculation of the proposed rate rider within 30 days of the Order accompanying these Reasons.

Cal-Gas is directed to file amended and up to date tariff pages and General Terms and Conditions in accordance with the Order accompanying these Reasons, within 30 days of the Order.

8.0 OPERATING AGREEMENT WITH KICKING HORSE MOUNTAIN RESORT

By Order C-19-06, the Commission approved the June 6, 2003 Amendment to the Operating Agreement between Cal-Gas and KHMR that extended the term of the Operating Agreement to October 1, 2011 (2003 Agreement). Order C-19-06 included the following directive with respect to the 2003 Agreement:

"Cal-Gas will file any further amendments to the Amended Agreement for approval by the Commission as a change to the tariff for the Resort."

The Application notes that the Operating Agreement between Cal-Gas and KHMR has been extended to 2025. (Exhibit B-1-1) In response to BCUC IR 2, Cal-Gas submits that: "The contract extension (until) 2025 ... was not submitted for approval to the BCUC at the time on execution in August of 2007 between Cal-Gas Inc. and Kicking Horse Mountain Resort." (Exhibit B-8, BCUC IR 2.10.1.1)

The Panel has reviewed the 2007 Operating Agreement and finds that it is in the public interest. The Panel is of the view that the 2007 Operating Agreement does not impact the present determination on the rate increase requested in the Application; **however, in order to comply with Order C-19-06, Cal-Gas is directed to file a formal request for approval of the 2007 Operating Agreement with the Commission within 30 days of the Order accompanying these Reasons. If the Operating Agreement filed for approval with the Commission is of the same form and content as the 2007 Operating Agreement provided by Cal-Gas in Exhibit B-8, the Panel is of the view that it should be approved as filed.**

9.0 OVERALL RATE DESIGN

The Panel is of the view that the broader issue of the rate design for Cal-Gas customers at KHMR has been raised in this proceeding, principally as a result of the request for approval of the Administration Fee. Specifically, rate design issues related to the current minimum monthly charge and single-metered properties at KHMR were brought to the Panel's attention.

9.1 Minimum Monthly Charge

The Commission received objections to the Administration Fee from individual Cal-Gas customers at KHMR in the form of Intervener and Interested Party Comments and Letters of Comment. The comments principally cited the minimum monthly charge of \$25 currently in place as the major reason for objecting to the Administration Fee. For example:

- Ms. Diane Legg, an Intervener, submits that "...Cal Gas already charges a minimum monthly fee of \$25 when no gas, or less than a minimum amount of gas, is used in a month. The additional proposed administration fee of \$14.00 really represents a 56% increase over the current administrative fee of \$25 charged." (Exhibit C-2-2, p. 1)
- Ms. Wenche Sharp, an Intervener, submits that: "We have no objection to a small increase in the cost of propane, as we presume this is based on market forces. However, we do object to paying an additional \$14 per dwelling per month for admin costs. If Cal Gas continues with their minimum charge of \$25 and add the \$14 admin cost, their minimum charge will increase to \$39 + taxes per month – and in our case – we will be paying \$39 for 10 liters of gas per month – and that would be unacceptable." (Exhibit C-4-2)
- Mr. Jeff Husted, an Interested Party, submits that: "As (our) house is vacant for much of the year, we do not consume much propane but are currently on the hook for a minimum \$25 plus tax regardless of usage resulting in a minimum annual charge of \$300.00. With the increase in the administrative fee, the resultant minimum annual charge would be \$468 plus tax." (Exhibit D-3)

Currently, Cal-Gas customers at KHMR are not charged a basic monthly charge. Customers that consume over \$25 in any given month are only charged the variable commodity and delivery rates whilst customers that consume less than \$25 in any given month are charged the minimum monthly charge.

9.2 Single-Metered Properties

Mr. Shragie raised the issue of single-metered properties with multiple dwelling units at KHMR through Information Requests to Cal-Gas, amongst other submissions. Cal-Gas currently has three customers at KHMR that are single metered properties with multiple dwellings. (Exhibit B-5, Intervener IR 1.7) The minimum monthly charge is applied to each single-metered property as a whole and the individual dwellings within these multiple dwelling unit properties are not subject to a basic monthly charge.

9.3 Commission Determination

The Panel is of the view that Cal-Gas should give consideration to the fairness of the minimum monthly charge and the treatment of single-metered properties with multiple dwellings at KHMR.

Cal-Gas acknowledges the rate design issues in their letter dated January 16, 2013:

"After careful consideration to the current customers, future customers and the long term commitment of Cal-Gas Inc. to KHMR we would like to revisit this area of our business with public consultation from the customers, utilities professionals and Cal-Gas personnel to design a new fee structure for this area of business that is fair to all customers and Cal-Gas at KHMR. Following this we will submit a new application for approval to the BCUC." (Exhibit B-1-3)

The Panel agrees that the rate design for customers at KHMR should be examined; however, such an assessment should be undertaken with due consideration for the related costs to the ratepayers at KHMR. **Accordingly, the Panel directs Cal-Gas to file a rate design study cost assessment with the Commission, within 90 days of the Order accompanying these Reasons. The cost assessment should detail the expected costs to perform a rate design study that addresses the following issues:**

- **Minimum monthly charge;**
- **Lack of basic monthly charge;**
- **The treatment of different customer classes, including single metered properties with multiple dwellings and commercial customers;**
- **The treatment of the commodity component of rates;**
- **The treatment of the primary freight component of rates;**
- **Fair and reasonable return on Cal-Gas' property at KHMR.**

The Panel considers that the rate design study cost assessment is an important step towards addressing the rate design issues that have been brought forward in this proceeding.

TAB 4



IN THE MATTER OF

BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

**2007 RATE DESIGN APPLICATION
PHASES –II AND III**

DECISION

December 21, 2007

Before:

**Anthony J. Pullman, Panel Chair & Commissioner
Robert J. Milbourne, Commissioner
Liisa A. O'Hara, Commissioner**

5.0 COMMISSION DETERMINATION

The Commission Panel notes that the evidence before it in both Phase I and Phase II of the Application does not enable it to make determinations concerning the fairness and reasonableness of Zone II rates other than in the Bella Bella NIA. The Commission Panel notes that BC Hydro has stated its intention to file a full rate design application in 2008 concerning its NIA operations and expects that such an application should address the inclining block rate structure presently employed in Zone II Rate Schedules 1107, 1117, 1127 and 1234, the structure of the Large General Rate Schedules 1255, 1256, 1265 and 1266 and the Zone II system extension policies.

In addition, the Commission Panel expects BC Hydro to address the “postage stamp” rate design issue as it applies to Zone II.

So far as concerns the relief sought by Heiltsuk for Zone I rates to apply in the Bella Bella NIA, the Commission Panel finds no merit in the Heiltsuk arguments that Indian Reserve No. 1 (Bella Bella) is not in Zone II or that connection to a transmission line from Ocean Falls constitutes being on the provincial grid. The Commission Panel finds BC Hydro’s Rate Map “A” fully determinative that Bella Bella lies in the area to which Zone II rates apply.

The Commission Panel does not find BC Hydro’s rates in the Bella Bella NIA to be unduly discriminatory as that term is used in the Act and rejects the Heiltsuk’s arguments in this regard. The Commission Panel does not consider the rates charged by CCPC to be an issue in these proceedings. Discrimination, when applied to rates for utility service, can only be of an “intra-utility” nature and not “inter-utility”.

So far as concerns the Heiltsuk request for relief from the Zone II rate structure, the Commission Panel is persuaded that the declining block price structure in the EPA between BC Hydro and CCPC constitutes a rationale for finding that the inclining block feature of BC Hydro’s Zone II Rate Schedules is inappropriate for the Bella Bella NIA.

TAB 5



IN THE MATTER OF

FORTISBC INC.

**2009 RATE DESIGN AND
COST OF SERVICE ANALYSIS**

DECISION

October 19, 2010

BEFORE:

**A.J. Pullman, Panel Chair/Commissioner
L.A. O'Hara, Commissioner
M.R. Harle, Commissioner**

2010 cannot be relevant to a decision taken in 1992 to install a new steam turbine to meet the needs of the modernized and enlarged pulp mill. Accordingly, the Commission Panel rejects Celgar's submissions in this regard.

The Commission Panel considers that the APA of 1999 might provide Celgar with its most compelling argument concerning its right to purchase its full mill load from FortisBC at embedded rates.

The Commission Panel has considered the submissions of FortisBC and BC Hydro in respect to the APA, that since the APA dealt with the ability of Eligible Customers to access power from other sources rather than the ability of self-generating customers to export power, the APA is therefore irrelevant to these proceedings.

Nevertheless, the Commission Panel considers that the APA remains in effect and that some of the principles established in the APA and found by the Commission to be in the public interest in 1997 might be relevant to these proceedings.

The Commission Panel considers that hypothetically, an eligible customer that had chosen in 1997 to receive service from a third party and was now looking to "come back into the fold" and take service from FortisBC in 2010, would be entitled to receive service at embedded cost, but this must address the Fair Treatment principles to minimize the harm to existing ratepayers.

Similarly, Celgar's mill might be considered in 1997 to have made the decision to take some of its service from FortisBC and to self-generate the rest. The Commission Panel finds it informative that immediately after the issue of G-27-99, FortisBC and the mill filed an agreement that had the mill taking service on the basis of 16 MVA firm service with the balance of its needs being met by FortisBC on a reasonable efforts basis from the open market.

On the basis of its historical agreements with FortisBC the Commission Panel considers it possible that Celgar may have established a right to 16 MVA of service from FortisBC at embedded rates.

Should it wish to establish any higher obligation from FortisBC, the Fair Treatment principles will have to be addressed, which will presumably require negotiation between the two parties, followed by confirmation from the Commission after some form of public process.

The Commission Panel considers that its Order G-48-09 was issued in response to concerns raised by BC Hydro as to the possibility that heritage hydro was being sold to FortisBC customers with self-generation facilities to enable the latter to sell the output of their own generation facilities.

That being said, the Commission Panel notes that the PPA between the two utilities has a termination date and there may come a time when Order G-48-09 no longer has any relevance. Therefore, the Commission Panel declines to establish a GBL between FortisBC and Celgar. The parties are at liberty to establish their own GBL and, should they desire, to incorporate it into a general service agreement and submit it to the Commission for approval. The Commission Panel also notes that counsel for BC Hydro's announced at the Oral Phase of Argument that BC Hydro proposes to engage in Stakeholder consultation around the establishment of GBLs, which may inform Celgar and FortisBC as to the mechanics of establishing a GBL.

For these reasons, the Commission Panel declines to set a GBL between Celgar and FortisBC in this proceeding.

Should FortisBC propose to provide Celgar with some or all of the mill load from non-RS 3808 sources, the parties remain at liberty to negotiate terms and conditions and submit them to the Commission for approval.

The Commission Panel has considered Celgar's submission that the establishment of a GBL between it and FortisBC "would be the only approach that is consistent with, and follows, that taken by BC Hydro in relation to its self-generation customers."

In the Commission Panel's view, which was shared by all parties (including Celgar) to the proceeding, the issue of equity between pulp mills in BC falls outside the Commission's jurisdiction.

The Commission Panel will not address the issue further.

Finally for the reasons stated above the Commission Panel need make no finding with regard to Celgar's request that it determine that section 7.4(b) of the BC Hydro EPA in its present form shall have no force or effect.

TAB 6



IN THE MATTER OF

FORTISBC INC.

2012-2013 REVENUE REQUIREMENTS

AND

REVIEW OF 2012 INTEGRATED SYSTEM PLAN

DECISION

August 15, 2012

Before:

D.A. Cote, Commissioner/Panel Chair

A.A. Rhodes, Commissioner

N.E. MacMurchy, Commissioner

electricity is a necessity and, while customers are encouraged to reduce their consumption somewhat, it will take time for Energy Efficiency and Conservation (EEC) measures to take hold and consumption is unlikely to be significantly reduced during the test period, or in the near future. The Commission Panel, bearing in mind the requirements of subsection 59(5) of the *Act*, is sensitive to the comments of Interveners and will therefore make its determinations in this proceeding with a view to minimizing the proposed current and potential future rate increases, where possible.

3.2 Relevance of BC Hydro/FortisBC Inc. Rate Disparity

A number of interveners expressed concern about the disparity between FortisBC rates and BC Hydro rates. FortisBC acknowledges the disparity and the resulting customer concern. The “Fortis Group of Companies of BC Communications & Public Affairs Plan 2010/2011” states: “FortisBC rates are currently considerably higher than BC Hydro’s (approximately 20 percent). Although the spread is anticipated to diminish within the next five years, having higher rates remains a concern as they impact customer satisfaction and the company’s competitive position.” (Exhibit C1-7, p. 26)

As was demonstrated in evidence, FortisBC has gone through a period of significant capital expenditures over the last number of years in order to upgrade its generation and transmission infrastructure to provide greater safety and reliability. The bulk of this investment has now been made. In BC Hydro’s case, FortisBC testified that significant costs will be incurred by BC Hydro in the areas of new generation and refurbishment of existing plants that, when reflected in rates, will lower the disparity between FortisBC and BC Hydro rates. (Exhibit B-1, p. 6-7; T2:116, 221)

FortisBC operates with a different set of supply resources and with a different customer base in terms of geography, population density and the residential/commercial/industrial mix it faces. The Commission Panel has no mandate, nor does it find it appropriate, to require FortisBC to manage its utility business to produce rates or programs identical to those of BC Hydro. The Commission Panel believes that FortisBC’s responsibility is to provide safe and reliable service in a cost-effective manner consistent with British Columbia’s energy objectives. To do so, FortisBC must design and manage its system based on the resources available to it and the needs of its customers. This, at times, may result

in rates that are greater than those of BC Hydro and potentially times when they are less.

3.3 Importance of Productivity Improvements

A considerable number of submissions were made with respect to the need for productivity improvements and the need to impose a productivity factor. The Commission Panel believes there is value in addressing this at the outset by stating our position with respect to productivity improvements and outlining our expectations as to how a utility should address this issue within its day-to-day operations. In doing so, we would hope to provide greater clarity and insight into relevant parts of the Decision which follow.

The Commission Panel is of the view that there is an ongoing need for utilities to manage their business in a manner that actively seeks out and creates efficiencies resulting in what might be described as a “productivity improvement culture”. We believe this is in the interests of both the ratepayer and the shareholder. Put most simply, a productivity improvement culture is one where there is a demonstrated capability of a company to regularly undertake a review of the organization from both a macro and a micro point of view to examine what is being done, how it is being done and, where warranted, to make decisions to do things differently, or in some cases, not at all. When the Panel refers to the need for productivity measures we are not speaking of “cost cutting” but rather, “cost management”. It is not a difficult task to cut costs in order to achieve a desired result over a short term period. It is however, a difficult task to manage costs downward on a sustained basis with greater or no loss of efficiency over the longer term. It is this latter result that the Commission Panel believes needs to be addressed more comprehensively within utilities and best describes what can be achieved in a productivity improvement culture.

FortisBC notes that in the recent FortisBC Energy Utilities 2012 Revenue Requirements and Rates Decision which was issued on April 12, 2012, the Commission made a cut to FEU’s O&M budget and submits that such a reduction would not be appropriate in the context of the current proceeding. FortisBC states that imposing a percentage reduction as advocated by the BCMEU and BCPSO in this proceeding would not further the objective of subsection 60(1)(b)(iii) of the *Act* (which requires the

TAB 7

**THE LAW OF EVIDENCE
IN CANADA**

THIRD EDITION

Alan W. Bryant

Justice of the Superior Court of Justice for Ontario

Sidney N. Lederman

Justice of the Superior Court of Justice for Ontario

Michelle K. Fuerst

Justice of the Superior Court of Justice for Ontario



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Other factors peculiar to the circumstances in question could also be taken into account.⁶³⁶ For example, if one party in a business relationship forwards to the other a statement of account, the tendency would be to respond if the account was not correct.

§6.447 Where one person receives a bill for goods sent to another and that person makes no objection after a reasonable lapse of time, the bill and lack of objection are some evidence to the effect that the goods were delivered for the credit of that person.⁶³⁷

§6.448 A party, while not making an admission of certain facts essential to the opponent's case, can, by his or her conduct, suggest inferentially that he or she realized that he or she did not have a valid defence or action. Such was the case in *Greenwood v. Fitts*,⁶³⁸ where one party made statements to the effect that he would perjure himself and leave the jurisdiction if the action proceeded to trial. Resort to perjury is evidence of that party's belief that the cause or defence that he or she is putting forth is weak.⁶³⁹

(ii) Failure to Testify or to Call a Material Witness or Other Evidence

§6.449 In civil cases, an unfavourable inference can be drawn when, in the absence of an explanation, a party litigant does not testify, or fails to provide affidavit evidence on an application, or fails to call a witness who would have knowledge of the facts and would be assumed to be willing to assist that party. In the same vein, an adverse inference may be drawn against a party who does not call a material witness over whom he or she has exclusive control and does not explain it away. Such failure amounts to an implied admission that the evidence of the absent witness would be contrary to the party's case, or at least would not support it.⁶⁴⁰

⁶³⁶ John William Strong (ed.), *McCormick on Evidence*, 6th ed. (St. Paul: West Publishing, 2006), vol. 2, § 262, at 213-14.

⁶³⁷ *Sarbit v. Booth Fisheries (Cdn.) Co.*, [1951] 2 D.L.R. 108, [1950] M.J. No. 48 (Man. C.A.).

⁶³⁸ (1961), 29 D.L.R. (2d) 260, [1961] B.C.J. No. 143 (B.C.C.A.).

⁶³⁹ See also *Moriarty v. London, Chatham & Dover Railway Co.* (1870), L.R. 5 Q.B. 314.

⁶⁴⁰ *Johnston v. Murchison* (1995), 127 Nfld. & P.E.I.R. 1, [1995] P.E.I.J. No. 23 (P.E.I.C.A.); *R. v. Zehr* (1980), 54 C.C.C. (2d) 65, [1980] O.J. No. 1130 (Ont. C.A.); *R. v. Belowitz* (1990), 56 C.C.C. (3d) 402, [1990] O.J. No. 734 (Ont. C.A.); *R. v. Rooke* (1988), 22 B.C.L.R. (2d) 145, [1988] B.C.J. No. 104 (B.C.C.A.); *Murray v. Saskatoon*, [1952] 2 D.L.R. 499, at 505-506, [1951] S.J. No. 59 (Sask. C.A.); *Levesque v. Comeau*, [1970] S.C.R. 1010, 16 D.L.R. (3d) 425, at 432, [1970] S.C.J. No. 55 (S.C.C.); *Lynch & Co. v. U.S.F. & G. Co.*, [1971] 1 O.R. 28, [1970] O.J. No. 1616 (Ont. H.C.J.); *Vieczorek v. Piersma* (1987), 36 D.L.R. (4th) 136, [1987] O.J. No. 124 (Ont. C.A.); *Lambert v. Quinn* (1994), 110 D.L.R. (4th) 284, [1994] O.J. No. 3 (Ont. C.A.); *Badger v. Dowsett* (1994), 21 Alta. L.R. (3d) 323, [1994] A.J. No. 519 (Alta. Q.B.); *MacMaster v. York* (1997), 42 M.P.L.R. (2d) 90, [1997] O.J. No. 3928 (Ont. Gen. Div.); *Canada Southern Petroleum v. Amoco Canada Petroleum Co.* (1997), 8 C.P.C. (4th) 328, at 351-52, [1996] A.J.

TAB 8

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A Treatise on Evidence

Expert Evidence

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therapists.⁵⁷ On the other hand, a physician who sends patients to other professionals for care that this referring physician could lawfully have provided may be able to testify about the care given by those professionals. For example, a physician who sends a patient to a physical therapist can testify in a malpractice action against the therapist if the physician is familiar with the relevant standard of care.⁵⁸ However, physicians may not testify regarding unfamiliar standards of care, even in related fields.⁵⁹

§3.5.4 PHYSICIAN TESTIMONY ON CAUSATION

Courts have been much too liberal about allowing doctors to testify to causation of injury outside the malpractice arena. Few doctors are trained in relevant disciplines. In one typical case,⁶⁰ a general surgeon qualified as an expert on the issue of whether a spermicide caused a child's birth defects. The surgeon did not specialize in genetics, epidemiology, or teratology; his professional work did not relate to these subjects; he had not received formal training in them since medical school; he had never been consulted to determine the cause of birth defects, except for litigation purposes; he had published no articles dealing with birth defects; and he was "not familiar with basic principles used in evaluating epidemiological studies."⁶¹

⁵⁷ *Novey v. Kishwaukee Cmty. Health Servs. Ctr.*, 531 N.E.2d 427 (Ill. App. Ct. 1988).

⁵⁸ *Lee v. Visiting Nurse Health Sys. of Metro. Atlanta, Inc.*, 477 S.E.2d 445 (Ga. Ct. App. 1996).

⁵⁹ Thus, a physician may not be qualified to testify regarding alleged negligence by a nurse or pharmacist. *Shidler v. CVS Pharm., Inc.*, 72 Fed. R. Evid. Serv. 572 (N.D. Ind. 2007) (physician not qualified to testify regarding alleged negligence by pharmacist); *Jones v. Ark-La-Tex Visiting Nurses, Inc.*, 128 S.W.3d 393, 397 (Tex. Ct. App. 2004) (holding that a physician was not qualified to render expert testimony on appropriate nursing care); *Davies v. Holy Family Hosp.*, 183 P.3d 283 (Wash. Ct. App. 2008) (a physician may not testify against other hospital professionals when he is unfamiliar with their standard of care). However, when there is a general standard of care applicable to both physicians and nurses, as with the administration of injections, a physician may testify against a nurse. *Staccato v. Valley Hosp.*, 170 P.3d 503, 506–507 (Nev. 2007). Moreover, if nurses and physicians are part of the same surgical team, a physician in the relevant specialty may testify as to whether nurses met their standard of care as members of the team. *Petryshyn v. Slotky*, 902 N.E.2d 709 (Ill. App. Ct. 2008).

⁶⁰ *Smith v. Ortho Pharm. Corp.*, 770 F. Supp. 1561, 1568 (N.D. Ga. 1991).

⁶¹ *Id.*; see also *In re "Agent Orange" Prod. Liab. Litig.*, 611 F. Supp. 1223, 1242–1243 (E.D.N.Y. 1985) (qualifying a physician to testify regarding epidemiologic studies, despite his lack of background or interest in epidemiology), *aff'd on other grounds*, 818 F.2d 187 (2d Cir. 1987).

Another court allowed two clinical physicians with no specialized research experience to testify about the causal relationship between ingestion of different doses of DES by pregnant women and injury to an unborn child. The court found it sufficient that “the teratologic effects of drugs on unborn children was a matter taken up in the general medical education of both doctors and in their specialized training in obstetrics and gynecology,” that they “both had studied some of the articles published regarding DES and embryology,” and that they had both treated many DES-exposed patients in their practices.⁶²

Courts often assume that because a clinician has examined a plaintiff, that clinician has special insight into the cause of the plaintiff’s injuries,⁶³ or that all physicians are experts in determining the relationship between particular toxins and disease.⁶⁴ Physicians are trained to diagnose and treat medical problems, not to present an expert opinion on *causation* of injury from exposure to drugs or toxic chemicals.⁶⁵ Courts sometimes

⁶² *Payton v. Abbott Labs*, 780 F.2d 147, 155–156 (1st Cir. 1985).

⁶³ *E.g.*, *id.* at 156; *see* *Quinton v. Farmland Indus.*, 928 F.2d 335, 337 (10th Cir. 1991) (allowing doctor of veterinary medicine to testify regarding the toxic effects on dairy cows of excessive cockleburrs because general medical training that “qualifies a doctor to diagnose and treat a wide range of physical disorders in the real world” qualifies a doctor to testify regarding causation); *San Francisco v. Wendy’s Int’l, Inc.*, 656 S.E.2d 485 (W. Va. 2007) (holding that a trial court erred in not allowing a physician who acknowledged he was not an expert regarding foodborne illnesses to testify regarding the cause of plaintiff’s gastroenteritis; he had treated the plaintiff and other patients for foodborne illnesses). *See generally* *Tun v. Gonzales*, 485 F.3d 1014 (8th Cir. 2007) (holding a physician with board certification in internal medicine and infectious diseases was qualified to testify that a refugee seeking asylum suffered from post-traumatic stress disorder because he was tortured, and that the physician’s testimony “was clearly admissible and highly probative”). *But see* *Turner v. Iowa Fire Equip. Co.*, 229 F.3d 1202, 1207 (8th Cir. 2000) (“A treating physician’s expert opinion on causation is subject to the same standards of scientific reliability that govern the expert opinions of physicians hired solely for purposes of litigation.”); *Merrell Dow Pharms., Inc. v. Havner*, 953 S.W.2d 706, 719 (Tex. 1997) (“A physician, even a treating physician, or other expert who has seen a skewed data sample . . . is not in a position to infer causation.”).

⁶⁴ *E.g.*, *Holbrook v. Lykes Bros. S.S. Co.*, 80 F.3d 777, 782 (3d Cir. 1996) (requiring district court to allow a physician who was an expert in pulmonary disease to testify to the relationship between radiation and mesothelioma); *cf.* *Bloomquist v. Wapello County*, 500 N.W.2d 1, 3–5 (Iowa 1993) (causation evidence from treating physicians sufficient to create jury question).

In past decades, family physicians often testified successfully on behalf of plaintiffs alleging that simple trauma caused their cancer, to the detriment of defendants who had competent oncologists testifying on their behalf. Courts in such cases often would erroneously assign more weight to the opinions of general practitioners because they had examined the plaintiff, than to those of leading experts in the field of cancer research who had not. *See Phantom Risk: Scientific Inference and the Law* 425–427 (Kenneth R. Foster et al. eds., 1993).

⁶⁵ *See* Bernard D. Goldstein & Mary Sue Henifin, Reference Guide on Toxicology, in Reference Manual on Scientific Evidence 401, 416 (Federal Judicial Center ed., 2d ed.

allow medical experts to testify regarding causation because the experts claim to be engaging in “differential diagnosis,” a standard medical technique. However, physicians use the term to “describe the process of determining which of several *diseases* is causing a patient’s *symptoms*.”⁶⁶ Courts and expert witnesses, by contrast, “use the term ‘differential diagnosis’ to describe the process by which causes of the patient’s condition are identified, particularly causes external to the patient.”⁶⁷ While the average physician is competent to engage in the first type of differential diagnosis, the same physician may not be competent to engage in the determination of external causation because “many of the facts relevant to a determination of external causation rely on a body of scientific literature that is not routinely used by treating physicians.”⁶⁸ A treating physician who lacks appropriate training to investigate causation, or who has not reviewed the relevant literature, should not be permitted to testify regarding causation. Unless a physician is sufficiently familiar with the literature discussing the possible causes of a plaintiff’s health problems, that physician should not be permitted to testify regarding causation.⁶⁹

2000). Exceptions include physicians certified in medical toxicology by the American Board of Medical Toxicology and certain occupational health specialists who are knowledgeable about toxicology. *Id.* By the same token, a toxicologist or epidemiologist may be more qualified than a medical doctor to testify to causation. *See In re Silicone Gel Breast Implants Prods. Liab. Litig.*, 318 F. Supp. 2d 879 (C.D. Cal. 2004) (epidemiologist with no experience regarding the claimed relationship between breast implants and disease may testify about epidemiological studies purporting to rebut such a relationship); *Genty v. Resolution Trust Corp.*, 937 F.2d 899, 916–917 (3d Cir. 1991) (toxicologist with no medical degree may testify regarding causation); *In re Paoli R.R. Yard PCB Litig.*, 916 F.2d 829, 855 (3d Cir. 1990) (same); *Landrigan v. Celotex Corp.*, 605 A.2d 1079 (N.J. 1992) (epidemiologist competent to testify regarding causation); *cf. Krumback v. Dow Chem. Co.*, 676 P.2d 1215, 1218–1219 (Colo. Ct. App. 1983) (“[I]t was error to disallow Dr. Morgan’s opinion regarding causation” of cancer because “[a]lthough Dr. Morgan is not a physician, he is an internationally renowned health physicist who has spent 40 years studying the effects of radiation on the human body.”). *But see Livshits v. Natural Y Surgical Specialties, Inc.*, 35 Fed. R. Evid. Serv. 433, 60 U.S.L.W. 2436 (S.D.N.Y. 1991) (expert in toxicology, experimental pathology, and public health “was not qualified to express a diagnostic opinion as to what had caused the acceleration of the cancer in this particular patient’s breast”).

⁶⁶ Mary Sue Henifin et al., “Reference Guide on Medical Testimony,” in *Reference Manual on Scientific Evidence* 439, 443 (Federal Judicial Center ed., 2d ed. 2000).

⁶⁷ *Id.* at 443–44; *see also infra* §10.3.2.b (discussing differential diagnoses of clinicians).

⁶⁸ *Id.* at 472.

⁶⁹ *Id.* at 452. The *Reference Manual* states that “[t]o determine general causation, the expert must review the pertinent literature, as familiarity with this literature is key to expert opinion.” *Id.* This is imprecise. Familiarity is not enough; the proposed expert must actually have the training and knowledge to understand the pertinent literature.

TAB 9

Introducing Evidence at Trial: A British Columbia Handbook

Second Edition

THE CONTINUING LEGAL EDUCATION
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One of the benefits of the rule of confrontation is that counsel learn of the defence during cross-examination of their main witness and can structure the rest of their case to try to rebut that theory or call additional evidence that militates against that version of events. For instance, in assault cases, Crown counsel may call the complainant first, then subsequently call their medical expert and put the defendant's version of events to the expert in hypothetical form.

There is now support for the idea that defence counsel need not put every detail of their theory to the witness and that only the central features or significant matters bring the requirements of the rule into play (*R. v. Carter* at para. 57; *R. v. McNeill*). As well, there is some judicial divergence as to the degree to which a client should be held responsible for the tactics employed by defence counsel (*R. v. Carter* at paras. 61 to 65). If there is a failure to confront a witness in a jury trial, the issue should be brought to the attention of the trial judge. The trial judge may allow the witness, if available, to be recalled to remedy the situation. If counsel declines such a remedy, or if counsel is unable to explain a clear case of non-confrontation, the trial judge may provide a special instruction to the jury.

Thus, the "rule" in *Browne v. Dunn* is perhaps no longer as powerful as it once was. Failure to confront a witness gives rise to a question of weight and is a factor to be taken into account in the assessment of the evidence. However, counsel are still well advised to put to the witness all significant matters they seek to contradict. This necessitates taking extra care to receive appropriate instructions about what the opposing witness will say should he or she testify and offer an alternative version of events.

B. FAILURE OF A PARTY TO CALL A WITNESS [§4.5]

An unexplained failure to call a material witness may in some cases justify an adverse inference against a party that the witness's evidence would have been contrary to, or at least unhelpful to, the party's case. This rule has long existed in civil cases. In *Blatch v. Archer* (1774), 1 Cowp. 63 at 65, Lord Mansfield stated as follows:

It is certainly a maxim that all evidence is to be weighed according to the proof which it was in the power of one side to have produced, and in the power of the other to have contradicted.

The notion of adverse inference is related to the best evidence rule. The inference should only be drawn in relation to non-production of witnesses whose testimony would be superior in respect of the facts to be proved (*Buksh v. Miles*, 2008 BCCA 318 at para. 30).

The rule has been applied in the criminal context to some extent, but only on a very limited basis and only with great care (*R. v. Rooke* (1988), 22 B.C.L.R. (2d) 145 (C.A.)). Where a party has special access to the missing witness, there will be a stronger basis for the adverse inference being drawn (*R. v. Jolivet*, 2000 SCC 29 at para. 27).

Understandably, the courts are generally reticent to inquire into counsel's discretion and draw an adverse inference from the failure to call a witness. There may be a proper explanation for the failure to call the witness, or the party in question may have no special access to the potential witness. The court may allow an explanation as to why certain evidence was not called to be furnished by counsel and not under oath (*Kokanee Mortgage MIC Ltd. v. Concord Appraisals Ltd.*, 2000 BCSC 1197 at paras. 70, 71 and 74). However, the court may not always be prepared to rely on counsel's statement, and a party faced with the inference should be prepared to lend the explanation greater force by calling evidence or run the risk of the inference being drawn.

I. CIVIL TRIALS [§4.6]

An adverse inference may be drawn against a party if, without sufficient explanation, he or she fails to call a witness who might be expected to provide important supporting evidence if his or her case were sound (*Barker v. McQuabe* (1964), 49 W.W.R. 685 (B.C.C.A.); *Barnes v. Union Steamships Ltd.* (1954), 13 W.W.R. (N.S.) 72 (B.C.S.C.); *Jones v. Trudel*, 2000 BCCA 298 at para. 32; *Bronson v. Hewitt*, 2010 BCSC 169, reconsideration denied 2010 BCSC 871, supplementary reasons 2011 BCSC 102). One example where the doctrine is commonly sought to be applied is where the plaintiff's counsel in a personal injury case fails to call the plaintiff's general practitioner who has regularly dealt with the plaintiff's injury.

However, the law recognizes that there may be alternative explanations for a witness not being called apart from the witness providing potentially unhelpful evidence. For instance, failure to call a brain-injured plaintiff who has a limited ability to testify may not attract an adverse inference (*O'Connell v. Yung*, 2012 BCCA 57). Also, the inference may not be drawn if the witness is equally available to both

TAB 10



Industry
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RSS-Gen
Issue 3
December 2010

Spectrum Management and Telecommunications

Radio Standards Specification

General Requirements and Information for the Certification of Radio Apparatus

1. Scope

1.1 Application

This Radio Standards Specification (RSS) sets out general requirements applicable to Industry Canada certification of radio apparatus used for radiocommunication other than broadcasting.¹

RSS-Gen must be used in conjunction with the RSS containing the technical requirements applicable to the type of radio apparatus concerned, and under which it must be certified. Except where otherwise specified in the applicable RSS, radio apparatus shall comply with the specifications and methods prescribed in RSS-Gen.

All sections of RSS-Gen except Section 7 generally apply both to radio apparatus that is subject to licensing and radio apparatus that is exempt from licensing. Section 7 generally applies only to radio apparatus that is exempt from licensing.

1.2 Exclusions

1.2.1 Broadcasting Equipment

RSSs, including RSS-Gen, do not apply to radio apparatus intended for general public broadcasting services. Such equipment is regulated by the Department's broadcasting equipment procedures and standards.

1.2.2 Interference-Causing Equipment

Interference-causing equipment, which is equipment other than radio apparatus that is capable of causing interference to radiocommunication, is covered by the Department's Interference-Causing Equipment Standards (ICES). Examples of interference-causing equipment for which ICES are published are digital apparatus and industrial, medical and scientific (ISM) radio frequency generators.

2. General Information

2.1 Categories of Radio Equipment

Radio apparatus are classified into two categories, Category I equipment and Category II equipment.

2.1.1 Category I Equipment

Category I equipment comprises radio apparatus for which a technical acceptance certificate (TAC) is required pursuant to subsections 4(2) of the *Radiocommunication Act* and 21(1) of the *Radiocommunication Regulations*. A TAC may be issued by the Certification and Engineering Bureau

¹ The term "broadcasting" means any radiocommunication in which the transmissions are intended for direct reception by the general public.

TAB 11



Industry
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RSS-102
Issue 4
March 2010

Spectrum Management and Telecommunications

Radio Standards Specification

Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)

Footnote 13 was updated in December 2010.

1. Scope

This Radio Standards Specification (RSS) sets out the requirements and measurement techniques used to evaluate RF exposure compliance of radiocommunication apparatus designed to be used within the vicinity of the human body. This includes mobile, portable and fixed transmitters having an integral antenna, systems requiring licensing with detachable antennas sold with the transmitters, or licence-exempt transmitters with detachable antennas as defined in RSS-Gen.

This standard shall be used in conjunction with other applicable RSSs. Before equipment certification is granted by Industry Canada, the applicant shall demonstrate compliance with all applicable departmental standards.

It is the responsibility of proponents¹ and operators of antenna system installations to ensure that all radiocommunication and broadcasting installations comply at all times with Health Canada's Safety Code 6, including the consideration of combined effects of nearby installations within the local radio environment. These requirements are specified in [Client Procedures Circular CPC-2-0-03, Radiocommunication and Broadcasting Antenna Systems](#).

1.1 Definitions

The following terms and definitions apply to this standard:

Body-supported device is a device whose intended use includes transmitting with any portion of the device being held directly against a user's body.²

Body-worn (or body-mount) radio is a wireless transceiver that is normally operated (or intended to be used) while it is placed in the pocket of a garment, or is maintained close to the body by means of a belt clip, holster, pouch, lanyard or similar mechanism.

Controlled use is the type of approval given to a device that is intended to be used by persons who are fully aware of, and can exercise control over, their exposure. Controlled use devices are not intended for use by members of the general public.

Controlled use limit refers to the SAR and RF field strength limits that apply to devices approved for controlled use (controlled environment).

Device refers to a sample unit, representative of the equipment for which certification is sought.

¹ "Proponent" is defined as anyone who is planning to install or modify an antenna system, regardless of the type of installation or service. This includes, among other services, Personal Communications Services (PCS) and cellular, fixed wireless, broadcasting, land-mobile, licence-exempt and amateur radio services.

² This differs from a body-worn or body-mount radio in that it is not attached to a user's body by means of a carry accessory. A portable computer with an external antenna plug-in radio card (e.g. PCMCIA card) and a portable computer with an antenna located in the screen section are examples of body-supported devices.

2.3 RF Technical Brief Cover Sheet

The information found in the RF technical brief cover sheet (see Annex A) shall be taken from the RF exposure technical brief. The information provided therein shall clearly support the compliance claim.

2.4 Approval Process

To obtain approval under this standard, the above-mentioned application for certification shall be accompanied by the duly completed RF technical brief cover sheet (see Annex A) and a properly signed declaration of compliance (see Annex B). However, if the device in question meets the exemption from routine evaluation limits of sections 2.5.1 or 2.5.2, only a signed declaration of compliance needs to be submitted (see Annex C).

In addition, submission of the RF exposure technical brief is now required for certification. It shall be accompanied by the completed RF technical brief cover sheet.

2.5 Exemption from Routine Evaluation Limits

All transmitters are exempt from routine SAR and RF exposure evaluations provided that output power complies with the power levels of sections 2.5.1 or 2.5.2. If the equipment under test (EUT) meets the requirements of sections 2.5.1 or 2.5.2, applicants are only required to submit a properly signed declaration of compliance (see Annex C). The information contained in the RF exposure technical brief may be limited to information that demonstrates how the output power of the transmitter was derived.

If the EUT does not meet the appropriate exemption limit, a complete SAR or RF exposure evaluation shall be performed.

It must be emphasized that the above exemption from routine evaluation is **not** an exemption from compliance.

2.5.1 Exemption from Routine Evaluation Limits – SAR Evaluation

SAR evaluation is required if the separation distance between the user and the radiating element of the device is less than or equal to 20 cm, except when the device operates as follows:

- from 3 kHz up to 1 GHz inclusively, and with output power (i.e. the higher of the conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power) that is less than or equal to 200 mW for general public use and 1000 mW for controlled use;
- above 1 GHz and up to 2.2 GHz inclusively, and with output power (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is less than or equal to 100 mW for general public use and 500 mW for controlled use;
- above 2.2 GHz and up to 3 GHz inclusively, and with output power (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is less than or equal to 20 mW for general public use and 100 mW for controlled use;

- above 3 GHz and up to 6 GHz inclusively, and with output power (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is less than or equal to 10 mW for general public use and 50 mW for controlled use.

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the output power of the device was derived.

2.5.2 Exemption from Routine Evaluation Limits – RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 1.5 GHz and the maximum e.i.r.p. of the device is equal to or less than 2.5 W;
- at or above 1.5 GHz and the maximum e.i.r.p. of the device is equal to or less than 5 W.

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

2.6 User Manual Requirements

The applicant is responsible for providing proper instructions to the user of the radio device, and any usage restrictions, including limits of exposure durations. The user manual shall provide installation and operation instructions, as well as any special usage conditions, to ensure compliance with SAR and/or RF field strength limits. For instance, compliance distance shall be clearly stated in the user manual.

The user manual of devices intended for controlled use shall also include information relating to the operating characteristics of the device; the operating instructions to ensure compliance with SAR and/or RF field strength limits; information on the installation and operation of accessories to ensure compliance with SAR and/or RF field strength limits; and contact information where the user can obtain Canadian information on RF exposure and compliance. Other related information may also be included.

2.7 Quality Control and Post-Certification Investigations/Audits

Industry Canada will conduct market surveillance compliance audits and compliance investigations from time to time, after certification, of radio apparatus intended for sale in Canada. In the event of an investigation of non-compliance, the certificate holder will be asked to provide to the Department records of the quality control process and any relevant information that would help identify issues related to compliance. It is expected that all certificate holders will be able to demonstrate a quality control process used for production inspection and testing in accordance with good engineering practices.