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POUR RÉALISER LE PROJET LECTURE À DISTANCE
PHASE 1

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RÉGISSEUR : Me RICHARD LASSONDE, président

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CLAUDE MORIN, JEAN RIOPEL, JEAN LAROSE
Sténographes officiels

COMPARUTIONS

Me PIERRE TOURIGNY
procureur de la Régie;

REQUÉRANTE :

Me JEAN-OLIVIER TREMBLAY
Me MARIE-JOSÉE HOGUE
procureurs de Hydro-Québec Distribution (HQD);

INTERVENANTS :

Me STÉPHANIE LUSSIER
procureure de Association coopérative d'économie
familiale de l'Outaouais (ACEFO);

Me DENIS FALARDEAU
procureur de Association coopérative d'économie
familiale de Québec (ACEFQ);

Me SERGE CORMIER
procureur de Association des redistributeurs
d'électricité du Québec (AREQ);

Me ANDRÉ TURMEL
procureur de Fédération canadienne de l'entreprise
indépendante (FCEI);

Me GENEVIÈVE PAQUET
procureure de Groupe de recherche appliquée en
macroécologie (GRAME);

Me ÉRIC DAVID
procureur de Option consommateurs (OC);

Me FRANKLIN S. GERTLER et
Me JACYNTHÉ LEDOUX
procureurs de Regroupement des organismes
environnementaux en énergie (ROÉÉ);

Me ANNIE GARIÉPY
procureure de Regroupement national des conseils
régionaux de l'environnement du Québec (RNCREQ);

Me DOMINIQUE NEUMAN
procureur de Stratégies énergétiques et Association
québécoise de lutte contre la pollution
atmosphérique (SÉ-AQLPA);

Me RICHARD BERTRAND et
Me LOUISE-HÉLÈNE GUIMOND
procureurs de Syndicat des employés-e-s de
techniques professionnelles et de bureau d'Hydro-
Québec, section locale 2000 (SCFP-FTQ);

Me HÉLÈNE SICARD
procureure de Union des consommateurs (UC);

Me MARTINE BURELLE et
Me STEVE CADRIN
procureurs de Union des municipalités du Québec
(UMQ);

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L'AN DEUX MILLE DOUZE, ce dix-huitième (18e) jour
du mois de mai :

PRÉLIMINAIRES

LA GREFFIÈRE :

Protocole d'ouverture. Audience du dix-huit (18)
mai deux mille douze (2012), dossier R-3770-2011,
demande d'Hydro-Québec Distribution pour réaliser
le projet Lecture à distance - Phase 1. Poursuite
de l'audience.

LE PRÉSIDENT :

Bonjour Mesdames et Messieurs. Est-ce qu'il y a des
questions préliminaires? Non. Alors, Maître Neuman,
vous avez la parole. Bien, peut-être juste pour
vérifier notre agenda aujourd'hui. Vous en avez
pour combien de temps à peu près?

Me DOMINIQUE NEUMAN :

Je vais essayer de... Écoutez, j'espère pouvoir
terminer dans moins d'une heure. J'allais vous
suggérer une demi-heure, mais pour être...

LE PRÉSIDENT :

Non, non, c'est correct. Ça va. Je présume que,
Maître Hogue, vous aurez des questions en contre-
interrogatoire?

Me MARIE-JOSÉE HOGUE :

Tout à fait.

LE PRÉSIDENT :

Savez-vous à peu près?

Me MARIE-JOSÉE HOGUE :

Je vous dirais, je prévois peut-être deux heures.

LE PRÉSIDENT :

Bon. D'accord. Merci. Alors procédons! Maître
Neuman, vous avez la parole.

Me DOMINIQUE NEUMAN :

Je suis en train de retracer le document.

PREUVE DE SÉ/AQLPA - SUITE

L'AN DEUX MILLE DOUZE, ce dix-huitième (18e) jour
du mois de mai, A COMPARU :

DAVID O. CARPENTER

LEQUEL témoigne sous la même affirmation solennelle
que celle prêtée antérieurement.

9 h 35

EXAMINED BY Me DOMINIQUE NEUMAN :

Alors, bonjour Monsieur le Régisseur. Dominique
Neuman pour Stratégies Énergétiques et
l'Association québécoise de lutte contre la

pollution atmosphérique.

Q. [1] Good morning, Dr. Carpenter.

A. Good morning.

Q. [2] So, we'll go back to your report. Yesterday afternoon, we stopped at the graphs which are on page 39 of your revised report. The revised report being SE-AQLPA-7, document 1.1, 0075. So, on page 39 it's the first graph. So, Dr. Carpenter, could you explain this first graph shows?

A. Well, this first graph is a plot of cell phone frequency studies showing effects and adverse health effects in relation to the FCC, which is the U.S. Federal Communication Commission, standards for radio frequency radiation emitted from cell phones. And what this graph is intended to show, and I should say apparently not all of these references have been filed and we will be happy to provide copies of each of those references that are listed here if requested. What this first plot shows is that there are numerous studies that report both effects in cellular and animal systems, and adverse health effects at intensities that are significantly, very significantly lower than current FCC standards.

Q. [3] When you mention current FCC standards, first

of all I'd like to attract your attention to the second item on the graph, the one entitled « FCC Power density Limit (cell) ». Cell means cellular or means...

A. Means cell phone, yes.

Q. [4] Cell phone, okay, cellular phone. The figure on the second item is six hundred (600), six hundred (600) microwatts per centimetre square... per square centimeter. Am I correct in saying that microwatts per square meters would be...

A. Would be a factor of ten thousand (10,000) difference, because...

Q. [5] Yes.

A. A square centimetre is ten thousand (10,000) times smaller than a square meter.

Q. [6] Yes. So, it would be six million (6,000,000)?

A. That's correct.

Q. [7] So, the FCC standard is what...

A. Is six million (6,000,000).

Q. [8] Six million (6,000,000), and we have already filed... there are already information that it's six million (6,000,000) in Canada, in Health Canada standard also. Okay. So, you mentioned that some of the studies that are listed in this graph have not been filed yet and you could provide them, we could

provide them...

A. Yes, we can provide them.

Q. [9] Okay. So, Mr. Commissioner, I would like to take note of a commitment, because some... even though we filed several studies, it's possible that some of these on these graphs have not been filed, so if we could have the possibility of filing those studies that are not already filed. We'll check if they are already in the filed documents.

LE PRÉSIDENT :

Bien, c'est votre preuve. Il n'y a pas aucune demande de produire ces documents-là, là.

Me DOMINIQUE NEUMAN:

Okay. But we would like to be able to...

LE PRÉSIDENT :

Alors... de faire votre preuve.

Me DOMINIQUE NEUMAN:

We would like to be able to... As Dr. Carpenter committed himself, we would like to file them later. We'll check those that are not already filed and we'll file them so you'll have the complete...

LE PRÉSIDENT :

C'est votre choix.

Me DOMINIQUE NEUMAN :

... the complete set. Okay.

Q. [10] The next graph?

A. The next graph is a similar kind of thing, but it looks at SAR, which is specific absorption rate, studies on cell phone frequencies reporting bioeffects and adverse health effects below the current FCC safety limits. And once again, you see that there are a number of studies that have been done, looking at things like genetic changes, cancer genes, blood-brain barrier effects, effects on leukemia and various nervous system effects that have been reported at specific absorption rates significantly below those that are the FCC, SAR limit.

Q. [11] Okay. Which is measure the SAR limit, is measured in watt per kilogram?

A. Watts per kilogram, yes.

Q. [12] Kilogram of the person, of the subject affected?

A. That's correct.

Q. [13] And the next graph?

A. This is similar, this is SAR studies on cell phone frequencies reporting effects and adverse health effects with the note that children absorb forty-five percent (45%) more RF than do adults. And once again, a series of data plotted showing numerous

effects that have been reported at specific absorption rates very significantly lower than the current FCC limit. I think most of these have been filed, but a few have not and we will provide those as well.

9 h 40

Q. [14] Is it correct to state that the FCC limits that are mentioned in these three graphs are based on the... on heat effect? It's the limit at... is the threshold where an exposure to radio frequency starts to have a heating effect on the subject or on the cell?

A. It's derived from the effect on heating but it does have an added safety factor.

Q. [15] Okay.

A. And so the point of these three plots is that, even with the added safety factor, there are numerous reports in both cells and animals as well as in human studies, for effects at intensities, specific absorption rates significantly lower than the FCC standards even with this added protective factor.

Q. [16] Okay. And these studies would show effects at levels below the point where there would be a heating effect, is that correct or?

A. Well one has to be very careful when you talk about

heating effects. Certainly below levels where there would be measurable heating, there's energy in these waves and there may be, there may be some heating effects at very, very low intensities that cannot be measured so I want to always be cautious in terms of saying there is no heating even at these very low effects. The major point of these three plots is that there are clearly bio-effects, including human health disturbances in the case of sleep disturbances and memory disturbances at exposure levels that are grossly lower than current FCC standards.

Q. [17] Okay. Let's go below the last graph in paragraph 64. Okay.

A. Well, what I was trying to say here is that we really need to learn from the lessons of the past in terms of exercising precaution at points in time when we have some indication of hazard but we don't have absolute final proof. And I have said repeatedly that there are many unanswered questions and the... that there is a risk is, I think is, fairly well documented. The magnitude of that risk is not well documented yet. And one has to only look back at the history of cigarette smoking and lung cancer as an example, or the history of many

different chemicals, the one I have been mostly involved with is polychlorinated biphenyls manufactured around the world from nineteen twenty-nine (1929) until late seventies (1970s), early eighties (1980s), and they were useful products and nobody recognized how dangerous they were, or at least the governments did not recognized how dangerous they were, until they had already spread everywhere and we all have them in our bodies now and they're causing adverse health effects now. So there is every reason to not wait until we have severe well documented harm to people to take at least, precautionary measures that are neither very expensive nor terribly onerous in protecting the human population.

Q. [18] On the subject in paragraph 65 you mention the first of, well there were three attachments that were first filed with your report, two from WHO, the World Health Organization, and the third one from the Canadian Government. In paragraph 65 you discuss the first one of them which is a draft precautionary framework for public health protection presented in two thousand three (2003) by the World Health Organization. So could you comment, well, on this?

A. Yes. This is a framework that is not specific to EMF for any other particular disease but it expands on the Rio Declaration which first enunciated the importance of the precautionary principle. And the World Health Organization, being that part of the United Nations that is responsible for activities in health, basically says, you know, we ought to be applying this concept across the board whenever there is a hint of some evidence of harm and we should not wait until the evidence is totally overwhelming as we did in the case of cigarette smoking and lung cancer.

To take reasonable steps, that's not advocating anything in terms of rigorous regulation, it's just saying that the precautionary principle as enunciated in the Rio Declaration is something that should be applied in all of human activities whether it's by governments, by individuals, and that when there is some evidence that is still not complete, we should do what we can to reduce exposure if it is not expensive, not excessively onerous, and in doing so we will protect the health of future generations.

Q. [19] On this subject, the fact that the measure should not be onerous, should not be costly, could

you restate exactly what you have, at what conclusion you have arrived in this particular case.

- A. Well in this particular case, apparently, there was a press announcement which I didn't see but reported that I was advocating only for wired smart meters. That's not the case. I certainly would, I think I said yesterday that wired smart meters would not give any RF but I recognize that wiring is expensive and that's not what I am advocating. I am advocating installation of smart meters using wireless technology but, doing so, by applying very elementary kinds of precautions that would reduce exposure. Don't have the meter generating signals that are not being used by the utility. I understand that the present plan is that there would be six pulses per day that would be utilised, but the current meters are giving somewhere a thousand (1,000) and three thousand (3,000) pulses a day.

That's a perfect place where technology should be possible to reduce wireless exposure that is not being used, awareness of where a meter should be placed to avoid areas where people are going to be closed to the meters. The exposure

falls off rapidly with distance, so keep the meters away from places of frequent human habitation. Be aware particularly of the unique vulnerability of children. So don't have them anywhere near the child's bedroom, or don't have them at a place where a child, even if it is on the outside of the house, would be likely to go up close to the meter. So I think that that is what the precautionary principle is about. It's just using common sense. I am not advocating something that I would see as being excessively onerous to Hydro-Quebec or any other utility. But I think there needs to be an acknowledgement by everybody, including the utilities that, at minimum, there's controversy in this area, that, at minimum, there are indications of hazard that may be less or may be more than our current knowledge indicates but that we should proceed with caution and with using every ability we have to limit exposure while more research and information is obtained.

09 h 50

Q. [20] Dr. Carpenter, I'll pass to the next document. Well, just for the record, the first document that you commented was already filed as Exhibit C-SÉ-AQLPA-0066, that's SÉ-AQLPA-7, document 2, it's

mentioned at the bottom of paragraph 65.

The next one, well, it's the next number, so it's 0067, SÉ-AQLPA-7, document 3. So, this is the World Health Organization Backgrounder on Electromagnetic Fields and Public Health.

- A. The World Health Organization actually organized a conference specifically on electromagnetic fields and that was primarily because of the controversies. And this is a general document issued by the World Health Organization that specifically identifies the importance of applying the Precautionary Principle in dealing with electromagnetic fields. Now, this document does not come out with strong statements saying these are proven to be hazardous. As a matter of fact, the first subparagraph is uncertainties about EMF and those are discussed in length, a whole segment on precautionary priorities, and talks about the Precautionary Principle, about what prudent avoidance is, which most of us think it's identical to the Precautionary Principle, and about Alara, which is as low as reasonably achievable. These are all strategies, that mean more or less the same thing, that are endorsed by WHO, even at a time when they acknowledge that there's much we don't

know.

I should say, at the very end, the implications for guideline limits, the World Health Organization is not advocating, nor am I advocating, rigorous guideline limits. And again, I don't want there to be confusion about the statements from the BioInitiative Report, which does give values for both outdoor and indoor exposures for which we don't think there are lower-level exposures that have been proven in scientific studies to cause harm. But we are not advocating those as regulatory limits at this point in time, there's too much uncertainty.

But those studies showing bioeffects, and in some cases real human health effects, at the lowest levels - it's primarily sleep disturbances -- those are significantly convincing that, in my mind, it strongly calls for implementing the Precautionary Principle as we deal with exposure to smart meters and other radiofrequency fields.

Q. [21] Yes. Could you indicate what are these thresholds recommended, not as guidelines, not as norms, but as indications by the BioInitiative Report for outdoor and indoor?

A. Well, in terms of microwatts per square meter, we

found a value of one hundred (100) microwatts per square meter for indoor exposures, one thousand (1,000) microwatts per square meter for outdoor exposures. But again, we're not recommending those as regulatory guidelines. Goals that we should try to achieve, yes. At least goals we should try to achieve in the part of a residence that is frequented by human occupants.

Q. [22] And those two (2) figures, if I understand correctly, are inspired from the data that is expressed in the three graphs that we saw a few minutes ago?

A. That is correct. Those are the lowest values for which there is at least some published evidence for bioeffects.

Q. [23] In paragraph 67 of your revised report, you discuss a document from the Government of Canada entitled, Framework for the application of precaution in science-based decision making about risk.

A. Yes, and this is an important document because it basically is a Canadian Government endorsement of applying the Precautionary Principle through... it's the Canadian Government seconding the WHO statement on precaution. Again, this document is

not specific to electromagnetic fields, but it is a general statement that it is the policy of the Canadian Government. The guiding principles of the government would be to exercise caution when there is some evidence for harm, but all the « Is » are not dotted, all the « Ts » not crossed, all of the information is not as incontrovertible as one might like. But still, the Precautionary Principle should be applied.

It might actually be worth reading the five (5) principles for precautionary measures because they're very important,

Precautionary measures should be subject to reconsideration, on the basis of the evolution of science, technology and society's chosen level of protection.

In this business, society's chosen level of protection is an important consideration. Society likes wireless technology, likes the convenience. So, that is a consideration,

Precautionary measures should be proportional to the potential severity of the risk being addressed and to society's chosen level of protection.

Again, coming back to society's chosen level of protection.

Precautionary measures should be non-discriminatory and consistent with measures taken in similar circumstances.

Precautionary measures should be cost-efficient, with the goal of generating an overall net benefit for society at least cost, and efficiency in the choice of measures.

And finally,

Where more than one option reasonably meets the above characteristics, then the least trade-restrictive measure should be applied.

And I endorse those concepts, I think that's a very good and succinct statement of what precaution is, recognizing that we must be concerned about how society responds to whatever exposure we're talking about, and how we must consider cost effectiveness as part of the decision-making process.

09 h 56

Q. [24] Dr. Carpenter, I will ask you to comment another section of the first document you quoted,

which is the World Health Organization, Draft
Precautionary Framework . That was 0066, SÉ-AQLPA-
7, document 2.

Me MARIE-JOSÉE HOGUE :

Je vais laisser le témoin répondre, mais je veux
quand même enregistrer une objection. C'est un
projet qui date, il y a longtemps, et qui n'a pas
été adopté à ma connaissance. Alors, je m'interroge
grandement sur l'utilité de commenter un projet non
adopté par l'autorité qui, à l'époque, l'a rédigé.
Alors, à moins qu'il y ait des questions qui
permettent de conclure autrement, quant à moi,
j'enregistre une objection.

Me DOMINIQUE NEUMAN :

De toute façon, je propose qu'on laisse le docteur
commenter, parce que de toute façon, même si
c'était adopté, l'OMS n'a pas juridiction pour
édicter des lois qui s'appliquent au Canada. Donc,
adopté ou pas, ce ne serait quand même pas une
obligation juridique et le point n'est pas de dire
que c'est une obligation juridique, ce n'est pas le
point que nous faisons.

Me MARIE-JOSÉE HOGUE :

Mais ce n'est pas non plus le point que je fais
valoir, ce n'est pas une question d'obligation

juridique, c'est que je ne vois pas quelle valeur on peut donner à un document qui est sous forme de projet et qui, dix (10) ans plus tard, n'a pas été adopté encore.

LE PRÉSIDENT :

Alors, selon vous, Maître Neuman, quelle est la pertinence de ce document?

Me DOMINIQUE NEUMAN :

C'est un document qui... qui est à l'état de projet, c'est vrai, mais il a l'autorité qu'a un projet émanant d'une organisation importante et il énonce certains principes.

LE PRÉSIDENT :

Bien, en tout cas, on va laisser le Dr Carpenter répondre puis je verrai...

Me DOMINIQUE NEUMAN :

Oui. Sauf erreur, je crois, il faudrait que je vérifie, le document canadien qui lui a été adopté par le gouvernement du Canada réfère à ce « draft ».

LE PRÉSIDENT :

En tout cas, on était censé faire le bilan des études. Si on s'en va vers des rapports qui n'ont pas été vraiment adoptés, confirmés... en tout cas. Je vais permettre la question puis je verrai la

force probante à donner à cette partie de la
preuve.

Me DOMINIQUE NEUMAN :

Oui. Nous en sommes à la conclusion qui est le lien
à faire avec le principe de précaution.

LE PRÉSIDENT :

Allez-y, allez-y.

Me DOMINIQUE NEUMAN:

Q. [25] So, Dr. Carpenter, on this document, on page
4, at the middle of the page of that document...
so, it's 0066, SÉ-AQLPA-7, document 2.

A. Yes. On the middle of the page...

Q. [26] There's a section entitled Precautionary
Framework and Guidelines .

A. I'm not in the right place then.

Q. [27] Not on the backgrounder, but on the draft.

A. I'm sorry, this is the general thing or the EMF?

Q. [28] We're looking at SÉ-AQLPA-7, document 2...

A. Oh, the Precautionary Framework, yes.

Q. [29] Yes.

A. The Precautionary Framework has two (2) objectives,
number 1,

To anticipate possible threats to
health and respond appropriately in
order to reduce exposures before the

introduction of an agent.

And that is certainly relevant in this case.

Q. [30] I would like to direct you to page 4, in the middle of the page, there's a section entitled, Precautionary Framework and Guidelines .

A. All right. So, under Precautionary Framework and Guidelines ,

In the absence of complete scientific information, the Precautionary Framework is not a basis for replacing existing science-based guidelines. All international and many national guidelines limiting human exposures are supported by health effects research results that are consistent, reproducible and confirmed by different laboratories and clearly identified levels of exposure to physical biological chemicals agents. In addition, exposure limits incorporate safety factors that allow for uncertainty and any identified thresholds for established effects. Such approaches remain essential within the Precautionary Framework.

However, it is not suitable to extending or developing guidelines where established guidelines exist. It is important that their scientific basis not be undermined by using the Precautionary Framework to support arbitrary reductions in the exposure limits.

Q. [31] So, the Framework establishes a distinction between the guidelines and what would result from the Precautionary Principle?

A. That's exactly right.

Q. [32] In paragraph 67 a. of your revised report, you mention the Seletun Resolution.

A. The Seletun Resolution was developed from a meeting that was held in Norway a couple of years ago. And the meeting involved -- it was a very international meeting -- involved EMF experts from around the world. I was not a participant at that meeting because of a conflict. But the Seletun Resolution basically is an endorsement of the Precautionary Principle as it applies to EMF, both ELF and radio frequency fields. It elaborates in fair detail, and I doubt that it's worth my reading a lot of this since it is in my report, but it acknowledges that

there are uncertainties, that the scientific evidence leaves many questions. But it emphasizes that the scientific evidence to date is very strongly suggestive of there being harm to humans and to the environment from excessive exposures to EMFs of the full frequency range. And it calls for precaution.

10 h 05

Q. [33] Okay. So this document has indicated at the end was already filed even twice. Once by us as a C-SÉ-AQLPA-0044, C-SÉ-AQLPA-5 Document 11, and also by ACEF de l'Outaouais as C-ACEFO-0027. Next on page 46, well I think we already covered these items?

A. Yes I think we have covered these items. Just a simple precautionary steps that can be taken that would not be outrageously expensive or inconvenient.

Q. [34] Okay. So I think, is there anything you wish to add? Otherwise I do not have any further questions.

A. No, I think we've covered the essence of my report.

Q. [35] Okay. So thank you very much Dr. Carpenter.

LE PRÉSIDENT :

Alors, merci Monsieur Carpenter. Est-ce que, on va,

est-ce qu'il y a d'autres, je ne me souviens jamais si c'est le Distributeur. Non, c'est les intervenants d'abord et le Distributeur contre-interroge en dernier. Est-ce qu'il y a des questions de la part des intervenants pour monsieur Carpenter.

Me DENIS FALARDEAU :

J'ai une question Monsieur le Président.

LE PRÉSIDENT :

Vous pouvez en poser deux vous savez.

Me DENIS FALARDEAU :

Je vais en poser une, la deuxième, mon confrère l'a déjà posée.

CROSS-EXAMINED BY Me DENIS FALARDEAU :

Q. [36] Monsieur Carpenter, take your earphone please.

A. Sorry, I don't have one.

Me DOMINIQUE NEUMAN:

I'm going to get one.

INTERROGÉ PAR Me DENIS FALARDEAU :

Q. [37] À la page 26 de votre expertise, paragraphe 50. À la dernière ligne, vous mentionnez qu'il y a très peu d'études portant sur l'exposition là, aux RF de toute l'infrastructure, il y a très peu d'études qui rapportent aucune atteinte en termes d'effets négatifs. Quelle est la proportion? C'est

vingt pour cent (20 %), dix pour cent (10 %) de ces études qui sont muettes sur les effets négatifs des radiations des infrastructures. C'est combien la proportion?

A. Well, I can't answer that in, as one number because I think it is quite different depending on what kind of studies is being done. Now for studies that have looked for genetic damage, I think the percentage of studies that show no effect is probably quite high, seventy-five percent (75 %). For studies on human health, the percentage that show no effect is much lower. I'm not sure I would even want to venture a guess, because it would be a guess, but it would probably be maybe forty percent (40 %), but I think that is not really a valid way of judging the state of the art.

Many negative studies don't ever... don't ever get published. They are not very interesting if they are negative. Positive studies, if they are published, for that matter, negative studies, if they are published, have gone through a peer-review process, and one at least can assume that there is some legitimacy in their results. So I don't think just counting the yesses and the nos, even though I did that yesterday in relation to one document, is

a valid way of establishing whether or not biological effects exist. I do feel that positive studies that are well done carry more weight than negative studies that are well done. Both are subject to, what we call, confounders, factors beyond the control of the investigator, but in a report those confounders should be identified. In good studies, studies that are subject to peer, rigorous peer review, they usually are. So I am not saying that every study has shown positive results. By no mean has it done so. But I do not believe that simply counting positive and negative studies is informative.

Q. [38] Merci. Merci Monsieur le Président.

LE PRÉSIDENT :

Merci Maître Falardeau. Est-ce qu'il y a d'autres intervenants qui ont des questions pour monsieur Carpenter? La Régie? Alors Maître Hogue, vous avez la parole.

10 h 10

CROSS-EXAMINED BY Me MARIE-JOSÉE HOGUE:

Q. [39] Good morning, Sir.

A. Good morning.

Q. [40] You have filed, actually, two reports, a first one about a month and a half ago, and another one,

an amended report much more recently. Are you the one who drafted these two reports?

A. Well, yes and no. Obviously they were formatted by Mr. Neuman.

Q. [41] Formatted, what do you mean by formatted by Mr. Neuman?

A. Well, they were put in the structure of numbers of, and different numbers, and paragraphs, and so forth.

Q. [42] Okay. You are not talking about the content but just the form?

A. The format, yes.

Q. [43] Okay.

A. Now, Mr. Neuman provided some of the information. For example, I had no access to the hydroelectric... the Hydro-Quebec information on the measurements, the configuration of smart meters. And that, as I state in my report, he provided me with that information.

Q. [44] Okay. We'll take it step by step, so sorry if I interrupt you, on a few occasions, during this cross-examination. You're saying that it's mentioned in your report. Can I take for granted that each time information have been provided to you by someone, it's mentioned in the report? That

it's not first-hand information but rather
information that have been provided by someone
else?

A. It says that the client informed me and it says
that at numerous places, yes.

Q. [45] Okay. So, apart from that, is there any other
portion of the report that has been drafted by
somebody else? Or you drafted the entirety of the
report?

A. Well, I can't say that I drafted the entirety of
the report. I provided the background information.
Some of this was derived from the previous reports
that I've written on the subject of RF radiation.
So, and those, of course, were all my words. When I
provide the information, there certainly was
assistance in Mr. Neuman in putting it... perhaps a
little more than just formatting, but not in terms
of changing the content. The content is mine.

Q. [46] The content, when you're saying the content,
do you mean the meaning of what is said in the
report or do you mean that all the writing that
have been done have been done by you? I just want
to understand the difference you're making,
actually.

A. Well, I couldn't say that all of the writing was

done by me, but the great majority was. And we had dialogue back and forth about "this needs to be expended, this needs to be clarified". And there were certainly some suggested changes that Mr. Neuman and perhaps his staff made. But the great majority, and certainly all the substantive content, was made by me.

Q. [47] And is there any way for us to know what has been written by you and what has been written by others, be it Mr. Neuman or anybody else from the AQLPA?

A. No, I don't think there is. I don't think I could tell you myself, in terms of, you know, actual words and sentences. But the great majority, and certainly everything of substantive content was written by me, except where it is clearly stated that the client has informed me.

Q. [48] And actually, when did you start working on the first report, the one that has been filed about one month and a half ago? Prior to the filing, when did you start doing the work?

A. I don't actually know the answer to that question. I've been involved in a number of cases on radiofrequency radiation. It was certainly significantly before that first report was filed,

perhaps a month before.

Q. [49] A month before?

A. Again, I don't really recall. But much of this report was derived from previous reports that I've written. It's an area that I know well and I've been involved with pretty continuously over the last several years. So, some of these things are derived directly from the BioInitiative Report, there's certainly some cutting and pasting from other sources, but these are sources that I produced and this report is a product from me.

Q. [50] Okay. And these other reports that you drafted, from which you took portions of the report that have been filed in this case, were they reports in which you intended to do a review of the literature or were they reports that were done for the purpose of advocacy, advocating a position?

A. Well, the... I don't really distinguish between the two things. When I advocate a position, which I clearly do, my advocacy is based on a systematic and comprehensive review of the literature. I was involved, as I mentioned yesterday, in a deposition and a report that was focussed on Wi-Fi in schools. That report was the model for this report. It was revised. Wi-fi and smart meters are similar,

they're not identical. So, a significant amount of this report comes from that report. Certainly, Mr. Neuman had no role whatsoever in that. But I, as a scientist, I may advocate for positions, but those positions are determined by the scientific literature which I determine to be of high quality, worth consideration, worth advocating for. And so, that I don't advocate unless there is a scientific basis behind the point of view that I'm pushing.

Q. [51] Okay. We'll go to your methodology. And actually, I would like to understand exactly what methodology you have followed for making your report. I understand that you took a portion in another report, that we're not aimed at making just a review of the literature, but more advocating a position based on some of the literature.

A. No, I would argue against that. This other report, it was a situation rather like this. It was a question of whether Wi-Fi should be put into schools in Portland, Oregon. And I was certainly advocating that you can use a wired computer lab in a school. Children are more vulnerable than adults. And I was advocating against the installation of wireless technology in those schools. But that position was based on a very comprehensive review

of the literature. In that case, the legal staff asked me very intentionally, against what I would normally do, to give a very detailed review of the literature. And I thought that the bibliography was excessively long, certainly longer than I would usually propose.

So, when Mr. Neuman first approach me to write a report, he had access to that previous report, and I said, "Well, I should cut out all of those references because some are positive, some are negative. The purpose of all of those references was simply to show the volume of information available." And his advice to me was, "Don't cut them out, if anything add to them." So, you know, when I write a scientific article, I write a report, in a case like this, I do not normally include thousands of references. There may not be a thousand (1,000), but there are a lot of references here. And they're there for a purpose, they're there to demonstrate that there is a large body of evidence. They're not all consistent, some are positive, some are negative. But this is not just some Johnny-come-lately issue for which there is no body of information. And so, again, this report was evolved from the previous report, it

certainly had input about the specifics of the situation here in Quebec. But it isn't an encyclopedic review, but it's a pretty complete review of the literature.

10 h 20

Q. [52] Okay. So, you said that for making this report on Wi-Fi, you made a comprehensive review of the literature. When was it? In what year? That you made the review, not that you filed the report or that you drafted the report, but that you made the review of the literature, the comprehensive review of the literature?

A. Well, I've made a comprehensive review of the literature for the last twenty (20) years.

Q. [53] Okay, but I'm talking specifically for the report that you...

A. For this report?

Q. [54] No, the one on Wi-Fi.

A. Well, I certainly reviewed the Wi-Fi, the RF literature primarily when we wrote the BioInitiative Report.

Q. [55] Okay. So, when...

A. Which was published four years ago and I was working on that for about three years. And I think that's the first time I really focused on radio

frequency radiation, because obviously most of my work prior to that point was focused on ELF.

Q. [56] Okay, so it would have been between two thousand five (2005), roughly, and two thousand eight (2008)?

A. Yes, roughly.

Q. [57] Okay.

A. And since that time, I've kept very current on the literature. I'm caught up in the controversies, I have an extensive reprint file, it includes many, many more publications that are included in this report. But... And you know, so is it comprehensive in the sense that absolutely everything that was ever written... My colleague, my coeditor for the BioInitiative Report has just sent me a flash drive that supposedly has every publication ever published. I don't see terribly much value in trying to look at every publication ever published, rather...

Q. [58] For the time being, I just want to know when you did what. That's what I'm trying to...

A. Alright, let's say five years ago...

Q. [59] ... what I'm trying to figure out. So, you did that between two thousand five (2005) and two thousand eight (2008), and after that, what you're

saying is you have been kept informed?

A. I keep myself informed to the current time.

Q. [60] And you constantly read the new articles or studies that were published in the field?

A. That's correct.

Q. [61] Okay. And for the Wi-Fi report, did you do again a complete review or you based your report on the review that you have done for the BioInitiative Report plus the other readings that you have made after the publication of the BioInitiative Report?

A. Well, it really was the combination of what I had reviewed and understood when we wrote the BioInitiative Report, plus everything else that's current since then, that I felt was important and relevant.

Q. [62] Okay. For the purpose of this report, the ones that you have filed in this case, did you do the same type of exercise, making sure that you were updating your review of the literature up to the moment that you drafted the report?

A. Absolutely.

Q. [63] Okay. I understand, however, because this is what you said, that you did not make reference in your report to each and every article that you may have read throughout the time, throughout the

years. I would like you to explain how you have selected the studies and/or the articles that you are referring to in your report.

A. Well, I started by outlining different types of studies. Human studies from towers and so forth, human studies from cell phones. Animal studies that focused on cancer, which there are very few. Animal studies that focused on biochemical changes or learning and memory changes. And so, I outlined the general areas for which I wanted to incorporate references. And then, under each of those areas, I selected what I considered to be well done significant studies.

Q. [64] Okay, but I want to address this selection. Have you listed a certain number of criteria that you would rely on throughout your whole exercise for determining whether you will select a given article or not?

A. Well, given that I can't possibly in a report like this include everything that's been published, my selection criteria would be is the article published in a respected journal, is it a peer-reviewed publication? On reading the article, does it appear to be a well done study without major scientific flaws? I give much more attention to

recent articles than ones from the distant past.
Although, clearly I referenced some articles from
the eighties (80's) and so forth.

So, there's certainly some selection, but I
referenced what I considered to be the best current
articles, and not depended on whether or not they
show positive effects.

Q. [65] Okay. And this decision as to whether the...

for example, the study seems to be well done,
without any flaws, is it a call that you made
yourself or did you base your judgement vis-à-vis
this criteria on what have been said by the
scientific community about a given study?

A. Well, it's a matter of both. Obviously, I'm aware
of reviews by other scientists. I'm very aware when
particular studies discredited their allegations,
that it's not reproducible. I avoid those like the
plague. There are enough studies that are clean in
the sense that they don't appear to be questioned
by other scientists. But I primarily make the
judgement on my own review of the scientific
article. I have an enormous... I have two big file
cabinets full of... one full of ELF and one full of
RF. I couldn't get along without my paper copies of
articles, because I can file them under subjects,

and so, when I'm asked to write a report like this,
that's where I go. I go to my reprint file.

10 h 25

Me MARIE-JOSÉE HOGUE :

Q. [66] And tell us, is it your position that actually
the result of the studies and/or of the articles
were irrelevant in the choice you made? Is it what
you're saying to this Board?

A. I'm sorry, I don't understand...

Q. [67] That the result achieved through the studies
or the result coming from the published articles
were irrelevant in the context of the choice you
made? You based your choice on other criteria and
you just disregarded what were the results of the
studies? Is it your position, Sir, that you
disregarded the result, that was not a criteria in
the context of the choice you made?

A. If I understand what you're asking, did I only
reference studies that supported my general
preconception, is that what you're asking?

Q. [68] No, I'm just asking if the result of the
studies, the conclusion reached by those that
conducted the studies, was a criteria in the choice
you made?

A. No, absolutely not.

Q. [69] No, okay.

A. The conclusion was not a criteria. Whether the study was done according to appropriate scientific procedures, whether the results, whether they're positive or negative, were clear and significant, were the criteria for inclusion or not inclusion.

Q. [70] In terms of the meta-analysis you have reviewed, we know that meta-analysis is not in itself research, it's a review of numerous researches that have been conducted by others, then, in this context, were the results of the meta-analysis a criteria in the decision you made?

A. Yes. I've said clearly that I rely a great deal on meta-analyses for a variety of reasons. For all of these studies, there is diversity in the conclusions of individual authors. The meta-analyses are certainly other individuals' evaluation of the quality of research, I've acknowledged that. The meta-analyses that I've quoted have been, for the most part, ones coming from distinguished scientists, they're not fly-by-night people that are trying to push a position. The reason I think that relying on the meta-analyses adds credibility to my position is that this is... these are careful reviews evaluating

quality of individual studies, identifying errors, identifying biases, and then coming up with some overall conclusion. So, it isn't that I, myself, am only relying on, you know, I like this study, I don't like that study. I certainly, like any other human being, find some that I think are better than others. But this is sort of a secondhand evaluation of other distinguished scientists.

Q. [71] But when you decided to retain or to refer to some meta-analyses and not to refer to other meta-analyses that you have reviewed, it's not based on the research that you made, the quality of the research that you made the choice because it's not a research, it's a meta-analysis. So, I want to know, in the context of the choice you made with respect to the meta-analysis, what were your criteria, did you give any weight to the result of the meta-analyses or no weight at all?

A. I think that I have included in this report every meta-analyses that I am aware of that has been written on the issue of radio frequency fields. And, to some degree, also on ELF fields. One of the reasons for focusing on meta-analyses is to save time and attention. For example, one (1) had fifty-nine (59) original articles. I could have included

all fifty-nine (59) and that obviously would make something that's just too long.

Q. [72] That, I understand perfectly well and I'm not disputing it.

A. No. But I do believe I included every meta-analysis that has been done...

Q. [73] On RF?

A. ... on RF, both in human health effects and on gene effects. I wouldn't say that I'm positive there wasn't one I didn't know about, but I think I've got them all.

Q. [74] Okay. You mentioned amongst the criteria that you have used that you gave more attention to the most recent research or articles, being in articles or...

A. Yes.

Q. [75] ... an article based on a meta-analysis, it's something that is usual in the scientific community to give more importance to the most recent articles or researches. That, you agree with me?

A. I do agree with that. And the idea is that you expect the most recent articles have reviewed previous studies in that particular field and so they will be testing hypotheses that have been presented by others.

Q. [76] I want to know how you did understand the mandate that has been given to you. In that context, I would like to know whether it's your position, Mr. Carpenter, that the amended report you filed and the testimony you gave yesterday and this morning, both represent the state of the science as of now?

A. Yes, that was my understanding that that was specifically what I was asked to do, is to convey what the state of the science is and really not beyond that. And I believe that that's what I've tried to do.

Q. [77] Okay. So, your position is that if someone looks at all the references you made in your report, to researches, to articles, to meta-analyses, we can get a good sense of the state of the science as of now?

A. Yes, I do.

Q. [78] You have used studies dealing mainly with cell phones since you mentioned in your testimony that there's almost no studies dealing with smart meters. And then, you proposed, again in your testimony, that the comments or the result of these studies can be used for assessing the impact of the radio frequencies. Are you familiar, yourself, with

the smart meters?

10 h 35

A. Well, I am not a technical person. I certainly have seen photos of them, I have, but I don't think I have ever seen one in the real world.

Q. [79] Okay. Are you, however familiar or otherwise aware of the technical specificities of meters, if you compare them to cell phones?

A. Well, I have some general understanding. I certainly don't have in depth understanding of the technical aspects. I mean, I know that they generate RF, they are designed so they will be able to receive RF, but beyond that I don't know the technical aspects.

Q. [80] I am going to ask you a few questions and feel at east just to tell me if you, if you don't know the answer, I just want to know exactly...

A. Sure.

Q. [81] ... what you know and what you don't know.

A. Yes.

Q. [82] Are you aware of the meters nominal power?

A. I couldn't tell you the...

Q. [83] No?

A. ... the power. No. I believe that's in my report but it's information that...

Q. [84] ... that you got from others.

A. That I got from others.

Q. [85] Okay. So we'll get back to...

A. Yes.

Q. [86] ... to this later on. Do you know what is the meter's average power?

A. No.

Q. [87] No?

A. Again, I think it's in the report, but...

Q. [88] Do you have an idea as to how deep the waves coming from the meter penetrate the body at nine hundred (900) megahertz?

A. Well, it's going to depend on the distance of the body from the meter but beyond that, that's not something that I have focused on.

Q. [89] You're not familiar with that?

A. No.

Q. [90] Do you also agree that on top of the distance, the penetration depends on the frequency that is used by the device?

A. Well, that's a little bit more debatable.

Theoretically, the higher the frequency, the greater the penetration. But there are many other factors, there is a report by a scientist of the University of Utah, Om Ghandi, that has, in modal

systems, looked at penetration of cell phone frequencies into brains of people of different ages so the thickness of the skull, the water content, the salt content of the brain are all factors, but I don't know the specifics in relation to smart meters.

Q. [91] Okay. I'm only not suggested it's the only criteria. I am just asking if you agree with me that this is one of the elements that has to be taken into consideration for determining what is the depth of the penetration.

A. I totally agree. It is a very important area.

LE PRÉSIDENT :

Maître Hogue, excusez-moi de vous déranger, là.
Maître Hébert, je ne connais pas la personne qui est assise à votre droite là, mais madame, je trouve que depuis un certain temps, vous faites toutes sortes de mimiques à chaque fois qu'il y a une réponse là, ça me dérange.

UNE VOIX DANS LA SALLE :

J'arrête.

LE PRÉSIDENT :

Ça me dérange, je vous demanderais peut-être d'adopter une attitude plus stoïque et prenez des notes là, mais moi ça me dérange parce que vous

êtes directement dans mon champ de vision là, et
puis... D'accord?

Me MARIE-JOSÉE HOGUE:

Q. [92] You mentioned actually that when the frequency
is higher, the penetration is going down or is
going up?

A. My impression is that it is going up, but again
this is really outside of my area of expertise.

Q. [93] Okay. Do you, have you been informed that the
measure that have been taken for the meters are
such that the emission are fifty (50), in English
it's milliwatt, microwatts, sorry, I'm always mixed
up, microwatts by square meter?

A. The only information I have is what is in my, the
early part of my report.

Q. [94] Nothing else?

A. Nothing else.

Q. [95] Okay.

A. And again, that is not, that is second hand
information.

Q. [96] Okay. You do mention however in your report,
so I imagine you know that as a fact that the level
of the RF emissions fluctuate depending on the
distance from the meter?

A. Absolutely, yes. That's true in general for RF

generators.

Q. [97] Do you know what is the mathematical formula for determining the level of emission depending where you, depending on the distance? Or you're not familiar with that?

A. Well, I think it falls off of one over the square of the radius.

Q. [98] The square of the radius?

A. That's true for magnetic fields from power lines at least.

Q. [99] Okay.

A. I'm assuming that's true here as well.

Q. [100] Do you know the limit, the exposure limit, that has been established by Health Canada?

A. I believe it's the same as the FCC, which should be six million (6,000,000) microwatts per cubic meter, per square meter.

Q. [101] Per square meter?

A. Yes.

Q. [102] Are you aware of the SAR, the specific absorption rate...

A. Yes.

Q. [103] ... corresponding to the exposure limit that have been established by Health Canada? For the public, not for the workers, for the public in

general.

A. I don't believe I know specifically for Health
Canada.

Q. [104] Okay. Do you know what is the meter's duty
cycle?

A. No.

Q. [105] No. Do you know the duration of the total RF
emissions per day for the meters?

A. Again, all I know is information provided to me. I
know that there are various pulses ranging
somewhere in the range of a thousand (1,000) to
three thousand (3,000) a day. The width of the
pulse I don't know.

Q. [106] Okay.

A. It may be in the report but it's not information
that I have paid much attention to.

Q. [107] Okay. Have you been informed that the meters
that are the subject of this hearing are issuing
like sixty (60) millisecond by pulse emission?

A. I didn't know that specifically but it doesn't
surprise me and I think that probably this is also
in my report.

Q. [108] Have you been informed that actually it means
that the emission per day lasts eighty-three (83)
seconds?

A. No.

Q. [109] Do you agree that when we are talking about eighty-three (83) seconds per day, we cannot qualify it as being a continuous emission?

10 h 40

A. Well, certainly that would be true. But I think one of the points that I made yesterday is that there is increasing evidence that the on and off is much more hazardous than the continuous wave. So, at several thousand per day, even though the pulses may be brief, that's a lot of on and offs. But again, my expertise is in the area of health effects of radio frequency radiation, and I only can repeat sort of second-hand information on these other more technical questions.

Q. [110] However, if we go to your report at page 15, Sir... I'm sorry, it's paragraph 15. At paragraph 15 you are starting the paragraph by saying that,

These smart meters would therefore
constantly expose persons in the
immediate vicinity of the meter.

Was it your understanding that actually the meters would constantly issue some RF throughout the entire day?

A. No, no. That was a wrong word, because I understand

that these are pulse emissions. It's not a constant wave form. But it's... I used the word "constantly" in the sense that twenty-four (24) hours a day, there would be repeated pulses, brief pulses. But they would be continuous over a period of twenty-four (24) hours.

Q. [111] Okay. When in the second paragraph you mention, "chronic, such as all-day exposure", are you talking about a constant exposure throughout the day or are you talking about, like I just mentioned, in the case of the meter, if we are talking about eighty-three (83) seconds, is it what you are qualifying as all-day exposure?

A. I'm meaning to say constant in the sense of repeated short pulses all day long.

Q. [112] Okay. But then, you are opposing chronic to the short and intermittent exposure. What is then the difference between both, because it seems to be two things that you are opposing in your sentence, Sir?

A. Well, what I'm trying to say there, is when you use a cell phone, at least most of us make a call for five or ten (10) minutes. But then, we won't be on the cell phone the rest of the day. So, I'm calling that, brief and intermittent. In contrast, if

someone is watching television right in front of the indoor smart meter and sits there for eight hours, there will be, granted they're not continuous pulses, but there will be pulses every several seconds, something like one thousand (1,000) to three thousand (3,000) times per day, that the individual will be exposed to. I'm calling that constant, even though I recognize now that the word constant perhaps shouldn't have been used, because I wasn't meaning that it was one hundred percent (100%) of... one every second. But it means that it's continuous over a period of the day.

Q. [113] Okay. And when you have chosen also "chronic, such as all-day exposure, is more likely than short and intermittent", that also should be corrected for reflecting what you're saying now?

A. Precisely.

Q. [114] Okay.

A. I'm certainly aware that these are pulses.

Q. [115] Do you have any idea how many minutes a cell phone has been evaluated to issue RF in average, in a day? Have you reviewed studies in that respect? Amongst other things, you can find information in the HPA report that you referred to yesterday.

A. Well, you know, there are studies in some of the

published reports. Interphone, for example, reports by total numbers of hours on a cell phone per year. But it's a much more complicated issue than that, because many people will have their cell phone on but not talking on it. When it's on but hanging in your belt, or in your purse, or whatever, there still is RF radiation associated with that, at much lower levels than when you're talking on it holding it to your head. So, there is some chronic exposure, if you're wearing it on your body all day long at low levels, but the exposure there is going to be very much less than when you're holding it to your head on a call.

Q. [116] Sure. We'll go to the density later on, and I agree with you, there's a difference. But do you have any clue as to what has been determined to be the average emission of a cell phone per day?

A. You mean the SAR from a cell phone?

Q. [117] No, the... how many minutes a cell phone emits per day? The average?

A. I have no idea.

Q. [118] You have no idea? You have... Just a point you made, you have pointed out a certain number of charts in various studies, in which the intensity of the device used for the test was mentioned. Do

you agree with me that the intensity is an important factor to consider when we talk about potential effects of RF?

A. Certainly.

Q. [119] Do you know what is the power density of a cell phone at roughly three centimetres of the head?

A. I couldn't tell you offhand what the power density is. It does vary by models.

Q. [120] If I suggest that it's between one million (1,000,000) microwatts by square meter and ten million (10,000,000) microwatts by square meter? Does it ring a bell to you and it makes sense?

A. It makes sense. It doesn't really ring a bell, but it does make sense. It's a very high exposure.

Q. [121] Okay. Do you know what is the average power density of a meter?

A. No.

Q. [122] If I suggest fifty (50) microwatts by square meter?

A. I think that is consistent with what I have in my report.

Q. [123] Okay. So, if we...

A. Provided to me by others.

Q. [124] If we compare to a cell phone that is kept at

roughly three centimeters of the head, we are, in the case of the cell phones we are talking about one million (1,000,000) microwatts to ten million (10,000,000) microwatts. And in the case of the meter we are talking about fifty (50) microwatts. Could you tell us what is the proportion if you compare both?

A. Well, I don't know if I can do that calculation right off my head, but the fifty (50) microwatts is at one meter.

Q. [125] At one meter, yes.

A. Yes.

Q. [126] You're totally right.

A. And the cell phone is held right against your head.

Q. [127] Yes.

A. So, that isn't... I can divide fifty (50) into one million (1,000,000), but...

Q. [128] It's a lot.

A. It doesn't matter.

Q. [129] You haven't made the calculation?

10 h 50

A. No. But I mean I certainly stated that the intensity of exposure from holding a cell phone to your head is very much greater than that you would get from a smart meter, we won't argue that.

Q. [130] And you have mentioned in your report that, actually, there is no calculation for someone who is closer to the meter than one meter.

A. Yes.

Q. [131] Have you been provided with the measurements that have been made by CRIQ, it's the document HQD-7, document 4, B-113. Have you been provided with this information, Mr. Carpenter? It's a report that has been done by a Quebec organization called CRIQ, C-R-I-Q, and there's measurements that have been...

A. Is that one of the attachments?

Q. [132] No, it's B-113, maybe I have it not too far.

A. I don't believe I've been provided with that.

Q. [133] You have not been provided with that?

Me DOMINIQUE NEUMAN:

I think this document is in French and we haven't translated any... provided Dr. Carpenter with any translation of any of the documents at all in this file, except...

LE PRÉSIDENT :

Mais on va attendre la question sur le document puis on verra.

Me DOMINIQUE NEUMAN :

O.K.

Me MARIE-JOSÉE HOGUE:

Q. [134] So, you were not provided with the document, but were you provided with the result of the measurements that have been done by the CRIQ or not?

A. Not to my knowledge.

Q. [135] Not to your knowledge. In your report, at paragraph 18, you refer to a density, an average density of forty-two point two (42.2) microwatts by square meter.

A. Yes.

Q. [136] I would like you to explain how you calculated this average power density?

A. I did not calculate that. And again, this is information that was provided to me by Mr. Neuman.

Q. [137] Have you verified the information that has been provided to you by Mr. Neuman?

A. No, I have not.

Q. [138] No. So, if I'm suggesting that actually when we look at the... you're saying in your report that there were six (6) subjects, so you're talking about the meters, the exterior meters, that have been measured, you have not checked this information?

A. My understanding was that report was all in French,

and unfortunately, I don't speak French, so it was never provided to me.

Q. [139] So, it's really all information that is coming from the attorney?

A. That's correct.

Q. [140] If I'm telling you, Sir, that the visits numbers 3 and 4 were for the same meter -- 2 and 3, I'm sorry -- 2 and 3 were for the same meter and that the visits 4 and 5 were the same place where there were three meters. Do you agree with me that then, we cannot make an average like you -- not you did but -- like the one that was provided to you and that actually the average should be even lower than the one appearing there where it was divided... it was based on the assumption that there were six meters rather than just few ones.

A. Well, if any of the numbers are inputs from more than one meter, that clearly would not be appropriate.

Me DOMINIQUE NEUMAN:

Just for the record, my consoeur implied that the visits numbers... she gave certain numbers that were the same and we referred the Régisseur to the actual document which shows which ones are the same or not. And what my consoeur stated, I believe, is

incorrect. But I understand she has that for the credibility purposes, but it's not in proof that the numbers that she specified are the same. We just need to look at the report itself to see. In one case, it was the same meter, but in the other case that my consoeur referred, it was not the same meter.

Me MARIE-JOSÉE HOGUE :

On fera référence aux mesures de monsieur Bélainisky, au rapport qu'il a déposé. Je corrige une chose, quand j'ai dit aux visites 4 et 5 c'étaient trois compteurs, c'est cinq compteurs et non pas trois. Alors, ça diminue encore plus.

Me DOMINIQUE NEUMAN:

The report speaks for itself.

LE PRÉSIDENT :

Mais, Maître Neuman, vous pourrez poser des questions à monsieur Carpenter s'il y a quelque chose qui n'est pas clair. Et aussi, vous allez pouvoir argumenter. Alors, n'argumentez pas au fur et à mesure que vous entendez des questions en contre-interrogatoire.

Me MARIE-JOSÉE HOGUE:

Q. [141] At least the information provided in your report mentions that for one of the meters the

results have been put aside because there has been two measures and there were two... the difference was too important between the two measures, and then, you felt that it was not reliable. Do you know if that also occurred for other meters that actually had been kept however for making the average?

A. I have no knowledge of...

10 h 55

Q. [142] No knowledge of that. With respect to the interior meters, you mentioned that actually two subjects were measured. Is it also information that has been provided by Me Neuman?

A. Yes.

Q. [143] And the average that has been derived from these two studies, was it done by you or was it done by Me Neuman?

A. It was done by Mr. Neuman.

Q. [144] It was done by Mr. Neuman.

A. Yes.

Q. [145] And you haven't checked the accuracy of this calculation?

A. No, I have not.

Q. [146] And you do however agree with me that if the number of meters is less than the one that has been

used, than the average will be lower?

A. If the number of meters that impact the measurement is greater...

Q. [147] It will be higher, I'm sorry.

A. Yes. Yes.

Q. [148] It will be higher. If we go at your paragraph 19, I understand that the exercise you have done is comparing the result of the measurements that have been made to the thresholds that have been proposed in the BioInitiative Report.

A. Correct.

Q. [149] Okay. And you are saying, as your first conclusion, that actually at one meter the average power density of the exterior meters is below, is below the threshold that is proposed by BioInitiative?

A. That's correct.

Q. [150] Could you tell the Board how many times the proposed limit, the one proposed by BioInitiative, is less than the one proposed by, not proposed, imposed by Health Canada or by FCC if you are more familiar with FCC? How many times less, is it?

A. Well, it's six million (6,000,000) versus one thousand (1,000) so that's...

Q. [151] Okay.

A. ... one sixth thousandth (1/6,000).

Q. [152] Six thousand (6,000)?

A. I believe so.

Q. [153] Six thousand (6,000) times less than the norm that has been adopted by Health Canada.

A. That's correct.

Q. [154] And the meters that Hydro-Quebec is planning to install at the outside then is more than six thousand (6,000) times less than the norm. It's your understanding?

A. Correct.

Q. [155] Okay.

A. Norm being the standards of Health Canada.

Q. [156] Being the standard. But it's also below what you are suggesting as a safe limit in the BioInitiative Report?

A. Yes. We say clearly that even with that one thousand (1,000) microwatts per meter square limit, the external meters did not exceed that.

Q. [157] Okay.

A. Those at least that were measured and reported.

Q. [158] Okay. We'll go at the third one. The one that you qualified as being more problematic. The meters situated inside occupied rooms and facing its occupants. Meters in the kitchen where measurements

showed the average power density exceeds the interior threshold of one hundred (100) milliwatt by square meter that is suggested by the BioInitiative Report. Do you agree with me that if the density that has been, the average density that has been calculated by Me Neuman is incorrect, we have to compare actually this proposed limit to the actual and...

Me DOMINIQUE NEUMAN:

Just a second. My consoeur said "calculated by Mr. Neuman". Dr. Carpenter said "provided by Mr. Neuman".

Me MARIE-JOSÉE HOGUE:

Okay.

Me DOMINIQUE NEUMAN:

It's not, we have a report by Mr. Bélainisky and I provided, as Dr. Carpenter mentioned, the data, but I am not the one who calculated the figures.

Me MARIE-JOSÉE HOGUE:

I am going to rephrase.

Me DOMINIQUE NEUMAN:

It's Mr. Bélainisky who did it in his report.

Me MARIE-JOSÉE HOGUE:

Q. [159] I am going to rephrase. If the average that has been given to you is inaccurate, do you agree

with me that we have to compare the limit proposed by BioInitiative to the real average density of the meters?

A. Of course.

Q. [160] And you are not in a position, Sir, to indicate in front of this Board that you have verified this density and whether it is below or over what is proposed by your group in the BioInitiative Report?

A. That is correct.

LE PRÉSIDENT :

Maître Hogue, est-ce que ça serait, vous avez d'autres questions?

Me MARIE-JOSÉE HOGUE :

Oui, je m'en vais dans la littérature maintenant...

LE PRÉSIDENT :

Ah bon.

Me MARIE-JOSÉE HOGUE :

... alors, c'est un bon moment pour prendre la pause.

LE PRÉSIDENT :

On va prendre une pause, on reprendra à onze heures quinze (11 h 15).

SUSPENSION DE L'AUDIENCE

REPRISE DE L'AUDIENCE

11 h 15

Me MARIE-JOSÉE HOGUE:

Q. [161] We'll now, Mr. Carpenter, go to this part of the report dealing with the literature. First of all, I understand that you are suggesting that there is a difference between the thermal and the non-thermal effect of RF. And if my understanding is correct, you are suggesting that actually the norms are based on the assumption that only thermal effects may cause harm, and you do disagree with this assumption?

A. Well, yes and no. The standards clearly are set on the ability of RF to cause measurable heating. I said earlier I think that measurable heating, there may be effects that are thermal effects at much lower than these standards, but there's just not the ability to measure them. So, but my real concern is that there are biological effects, including effects on humans at intensity levels that are very much lower than the standards. Whether they're thermal or non-thermal is subject to debate, but I think it's not the critical issue.

Q. [162] Are you aware of the paper that have been published by Jerrold Bushberg? I'm going to show it

to you. It has been published in two thousand eleven (2011), I'm going to give copy for the...

Me DOMINIQUE NEUMAN:

I have no objection with this document. And I see that Dr. Carpenter is reading it right now.

Me MARIE-JOSÉE HOGUE:

You have an objection?

Me DOMINIQUE NEUMAN:

I have no objection to this document.

Me MARIE-JOSÉE HOGUE:

I'm sorry. I was surprised.

Me DOMINIQUE NEUMAN:

Did my consoeur say it was Dr. Bushberg? Because it's not written.

Me MARIE-JOSÉE HOGUE:

No, I said Mr. Bushberg.

Me DOMINIQUE NEUMAN:

Okay. Okay.

Me MARIE-JOSÉE HOGUE :

Jerrold, first name. So-called Jerry.

Q. [163] So, my first question, Dr. Carpenter, is whether you have seen this article written by Mr. Bushberg prior... before today?

A. No, I have not.

Q. [164] In the context of the comprehensive review of

the literature that you have done, have you tried actually to determine whether there were any articles dealing with any questions or topics that you are discussing in your report? Have you made a specific exercise of verifying whether there were any articles or papers dealing with the specific issue addressed in your report?

A. Well, yes, certainly. I have continuously searched public and other electronic databases for articles. I would ask you who is this person and where was this published?

Q. [165] It's a program director, clinical professor of radiology and director of Health Physics Program at UC Davis.

A. Well, I would ask you what does a health physics professor have anything to say about health effects? And this is one of the issues here, that these standards, notice the organizations he talks about, IEEE, I never remember what that is, but it's electrical engineers and someone. Having people with the physics and engineering background determining whether or not there are adverse health effects from radio frequency radiation it's like going to your electrical engineer to treat your cancer. It's just inappropriate. These are not

people that have experience in evaluating the biological and medical literature. And they are basing their position on the theoretical framework that says there is no adverse effects that are not caused by tissue heating. And I find documents like this totally irrelevant to the issue. They are denying all of the evidence which has been presented in my report in great detail.

Q. [166] Okay. And then, should I gather from your answer that actually, when you came across articles or researches that have been conducted by people that are of other specialties than medicine, you just put aside these results, papers and researches?

A. Well, I certainly would give no credibility whatsoever to a health discussion by someone that comes from the physics department.

Q. [167] And have you...

A. And of course, this is not research. This is simply reiterating and trying to justify the standards that are set by groups that are dominated by engineers and physicists.

Q. [168] Are you familiar with the ICNIRP, International Commission on Non-Ionizing Radiation Protection?

A. Yes, I am.

Q. [169] And is it an organization that you look at
with respect?

A. No.

Q. [170] No? It's not?

A. No.

Q. [171] Could you explain what it is?

A. Well, it's a private organization. It has been
relatively closely affiliated with the World Health
Organization in that its advisory to the... Well,
its recommendations are often discussed in WHO
documents. Unlike the IEEE, it does have members
from the medical and biological community on it.

11 h 25

It has traditionally been a very
conservative organisation, conservative in its
recommendations, and that's why I say I have little
respect for it. We've discussed this in great
detail in the BioInitiative Report. I think that
they are wrong. This is one of the areas of
controversy. I certainly have respect for some
individuals that are affiliated with it, I have
little or no respect for others that are affiliated
with it, and it has engineers and physicists as
well as some health professionals.

Q. [172] Okay. Because the Chairman is...

A. It has consistently been very conservative.

Q. [173] Okay. Because the Chairman is Professor
Swardlow of the Institute of Cancer Research.
Swardlow. S-W-A-R-D-L-O-W.

A. No. I think the Chair is Professor Paolo Vecchia
from Italy.

Q. [174] Okay. I'm sorry, yes, I made a mistake. It's
the Standing Committee on Epidemiology...

A. Yes.

Q. [175] ... that is, that Mr. Swardlow is the
Chairman of.

A. That's correct, yes.

Q. [176] Okay. Do you know who is Mr. Swardlow?

A. I know who he is, I don't know him personally.

Q. [177] Okay. Do you know that he is from the
Institute of Cancer Research in the U.K.?

A. Yes.

Q. [178] And the commission members, there's Mrs.
Feychting, Karolinska Institute in Sweden. Do you
know who this person is?

A. Yes, I know her, yes.

Q. [179] Okay. Is he someone with a background in a
field that is related to health?

A. Yes, she is, she was one of the members of the

Interphone Study Group. One of the persons that opposed publication of the results. I mentioned some of her studies yesterday. She was the first author in the paper that showed that it looked at both residential and occupational exposure to power line fields demonstrating relations there. I think she is a credible scientist. I don't agree with her on issues around RF.

Q. [180] Okay. And Dr. Green. Dr. Adele Green. She's a doctor, she has a medical degree and a Ph.D. Do you know her?

A. No, I do not.

Q. [181] No? She's from the Institute of Medical Research in Australia.

A. I don't know her.

Q. [182] You don't know her. And do you know Dr. Kheifets who is a professor of epidemiology in the UCLA School of Public Health?

A. Yes. I know her quite well. She was formerly with the Electric Power Research Institute. She then went from there to the World Health Organization working for Dr. Rapacchioli who headed the World Health Organization's RF Programme and when he retired immediately was employed by an Italian utility. So I think this kind of going back and

forth between these international committees, the World Health Organization and telecommunications utility industry is one of the problems with members of these committees and, to some degree, with the WHO programme on non-ionised radiation.

Q. [183] Okay. Do you know Dr. Savitz...

A. Yes.

Q. [184] ... from Brown University?

A. Yes, I do.

Q. [185] And he is a doctor?

A. Yes.

Q. [186] Okay. And is there any link between him and the industry?

A. I don't know that there is.

Q. [187] Okay.

A. Dr. Savitz is the person that we recruited to do that second study in Denver, Colorado, that demonstrated that children living in homes with the magnetic fields had increased rates of childhood leukemia.

Q. [188] Do I gather from your testimony Mr. Carpenter that in the context of the selection you made of the articles and researches, you put aside those that had been conducted or published by people that you feel are associated with the industry?

A. None of the people you have mentioned, with the possible exception of Swardlow, has published anything that's their own research.

Q. [189] No, but that's not my question. My question is in the context of the selection you made of articles and researches that you brought to the attention of this Board, have you put aside and disregarded those articles or researches that have been conducted by people that you think are connected with the industry?

A. No, I have not. I have included them when they have done either a meta-analyses or researches articles.

Q. [190] Okay. We will go at page 10 of your report, sir. Yes, is it page 10 or paragraph, sorry, sometimes I am... It's page 10. "It is generally accepted..." Yes, it's paragraph 24, sir.

A. Yes.

Q. [191] You mention,

It is generally accepted within the relevant scientific community and has been established beyond any reasonable doubt that adverse human health effects occur at far lower levels of RF/MW radiation exposure.

I would like you just to tell this Board what is,

in your view, the relevant scientific community?

A. Well, I think that the investigators in the biological and medical fields that have done the original studies, that certainly does not include people from health physics departments, or engineering departments, or people that are on committees but have not, have not done research themselves. I think that it's drawing on the publications that are given in a report, the publications that are listed in the three figures in my report, that is the relevant scientific community.

11 h 35

Q. [192] You have actually represented both in your reports, so the first one you filed as well as the amended one, as well as in your testimony, that the literature shows a link between a cell phone and tumor and you have cited articles on this at paragraph 38 of your report. And in your first report, you were using the expression that it was very certain, and I'm stressing « very certain ». Go at 38 and I would like you to tell me how you conducted your review for choosing these articles and researches. Have you applied any specific criteria for making your choice?

A. Well, there are a. through j. references under 38 and these are all reports of diseases seen in people living near transmitter facilities, whether A.M. radio, television, cell towers and so forth. These are the most recent reports that have evaluated those things. I think there is one that is missing which is a German study that did not find elevated cancer in individuals living near an A.M. transmission tower that should have been included. But beyond that, this is all of the information of that kind of study that I'm aware of.

Q. [193] Commenting on the link between the cell phones or the towers and tumors?

A. Yes. This is not cell phones, these are only towers...

Q. [194] This is not cell phones?

A. Cell phones are 39. This is towers, A.M., television, cell towers, and all of these cases. And I think I commented yesterday that some of those articles at the end are older, less convincing to me. The ones that are listed early are recent, better-done studies and more convincing.

Q. [195] So, when you're saying at 38,

The evidence for harm from RF
radiation...

We should rather say from towers, RF coming from
towers, is it what you're saying?

A. Well, the critical paragraph there is the last one.
This first list of studies is of studies where the
whole body is exposed to RF radiation. Obviously,
when you're using a cell phone, you're exposing a
localized area and that's what's discussed in 39.
So, 38 and 39 are really continuous. But one of the
points that I was trying to make was that with
power line ELF you have whole-body exposure.
Leukemia is the cancer for which there's the
strongest evidence. With RF radiation, when you
have whole-body exposure, in almost all of these
studies, it was leukemia and perhaps brain cancer.

Q. [196] But the point I'm making, Mr. Carpenter, I
just want to make sure that we do understand
correctly what you're saying, is actually it's not
from RF radiation in general, but those articles
that you're using, or those researches that you're
quoting and using, are all RF coming from
electrical towers? Is it what you're saying?

A. No, no, no.

Q. [197] Power towers?

A. None of these are power towers, they are -- unless you want to call it a radio transmission tower, a cell tower -- yes, there are towers that are generating RF radiation and you're looking at the health of people that live near those towers.

Q. [198] What is the density of such towers, do you have any clue?

A. The density of the towers or the density of the radiation from the towers?

Q. [199] The density of the radiation from the towers.

A. Again, that's not within my area of expertise.

Q. [200] You don't know?

A. In some of these studies, there were density measurements, but I don't recall those without checking the individual studies.

Q. [201] And you are suggesting actually that the evidence is continuing to grow, this is what you mention in your paragraph 38?

A. That's correct.

Q. [202] And I looked at the various articles that you are citing, and if we go to the first one, it's a study that has been published in two thousand eleven (2011); the second one in two thousand eight (2008); the third one in two thousand two (2002); the fourth one in two thousand seven (2007); the

fifth one in two thousand four (2004); sixth one in ninety-seven ('97); the other one, the one from Hocking, Gordon, Grain and Harfield, do you know when it was?

A. No, and I neglected to include the year, but it was...

Q. [203] You do not know?

A. No. Well, let's see, I'm sure I have it here somewhere.

Q. [204] Yes, you can take your time to take a look.

Me DOMINIQUE NEUMAN:

Since the document was filed, we can just look at the document and see when it was published.

Me MARIE-JOSÉE HOGUE:

No, no, he can take the time to look at the document, for sure.

A. Nineteen ninety-six (1996).

Q. [205] Nineteen ninety-six (1996). Thereafter it continues, nineteen ninety-six (1996), nineteen ninety-six (1996), and the last one, two thousand four (2004). Have you made verifications to determine whether there were some most recent articles or researches dealing with the very same topic?

A. No, I can't say that I have. I mean these are all

reprints I have in my file under transmission towers. I did say that there was one German study that I did not include that was negative.

My conclusions in that introductory paragraph 38 really are ones that are meant to apply to paragraph 39 where I think the evidence for brain cancer from cell phone use is really much stronger, the reports much more convincing, than these earlier studies, and some of them more recent, but earlier studies simply looking at disease rates in people that live around towers.

Q. [206] I'm going to show you a certain number of articles or researches that have been published in the last few years. I would like you to tell us if you are aware of these articles and/or researches, and I'm going to start with the document...

LE PRÉSIDENT :

Je pense qu'il va falloir donner une cote, Madame Guilhermond, à ces documents-là.

Me MARIE-JOSÉE HOGUE :

Oui, il va falloir les coter tantôt, je ne l'ai pas coté d'ailleurs le premier.

LE PRÉSIDENT :

Ah, O.K., c'est correct.

R-3770-2011
18 mai 2012

DAVID O. CARPENTER
Cross-examination
- 86 - Me Marie-Josée Hogue

Me MARIE-JOSÉE HOGUE :

On devrait le coter, je ne sais pas... ou on va le
coter document par document.

LA GREFFIÈRE :

Oui.

LE PRÉSIDENT :

Oui.

Me MARIE-JOSÉE HOGUE :

Alors, celui de tantôt c'était celui du...

LE PRÉSIDENT :

De Jerry.

Me MARIE-JOSÉE HOGUE :

Jerry. Alors, Jerry sera coté B-0134.

LE PRÉSIDENT :

0134.

EXHIBIT B-0134: paper that have been published by
Jerrold Bushberg in two thousand
eleven (2011)

Me MARIE-JOSÉE HOGUE :

Celui-là sera B-0135

EXHIBIT B-0135: Report entitled - Background on
the Thermal vs Non-Thermal RF

exposure and Health Issue.

Me DOMINIQUE NEUMAN:

As earlier mentioned, in the context of a cross-examination, I don't object to my consoeur asking any question about any document, but the document itself, well, we don't know who is the person...

Me MARIE-JOSÉE HOGUE:

I'm going to ask the question, just let me...

Me DOMINIQUE NEUMAN:

... who is the author, if it was published in any form, anywhere. Maybe it was written for the purpose of Hydro-Quebec in this case, we don't know if anybody has seen this document before. The fact that the document is filed does not make it proof of even an article because it's not an article.

Me MARIE-JOSÉE HOGUE :

On argumentera...

LE PRÉSIDENT :

Oui, O.K., ça va.

Me MARIE-JOSÉE HOGUE:

Q. [207] Do you know who is M.L. McBride?

A. No, I do not.

Q. [208] Do you have any idea if she was part of any group that have studied the cell phones?

A. I have no idea, I've never heard of her.

Q. [209] Never heard of her. And have you ever come across this document prepared by McBride?

A. No. This, obviously, is not a research study, this is an opinion piece.

Q. [210] Yes.

A. And I would like to comment on it because it's focused more on... well, it talks about smart meters, it really builds on the cell phone studies. And we're going to come, sooner or later, to the large Danish study which I do not reference in my report because I consider it to be an extraordinarily flawed study. Schultz is the lead author of that study, this is viewed as being the largest study of cell phone users. It has two major flaws. It reported no elevated risk of brain cancer in cell phone use. It eliminated all corporate users of cell phones which, in the time of the period that was being studied, corporate users would clearly be the largest users. They were put in the unexposed category. It also considered anybody that got a cell phone after nineteen ninety-six (1996), and this was a report published last year, anyone that got a cell phone after nineteen ninety-six (1996) was considered to be

unexposed. So, this is a perfect example of how you can get a negative result if you adjust your exposed and unexposed populations separately.

11 h 45

So, I mean I don't know this document, I don't know where it appeared, but I reject it out of hand as being unscientific, uncritical, not supported. Let me ask where did it appear?

Q. [211] So, you referred to a research that, in your mind, includes many flaws, okay. Have you mentioned this research in your report?

A. No, I did not.

Q. [212] Because you have chosen not to report this research?

A. I consider that research to have no merit whatsoever.

Q. [213] Before making such calls, Mr. Carpenter, as to what will be brought to the attention of this Board or not, have you looked into the whole literature for determining whether your view, your own personal view, was shared by the relevant scientific community?

A. This view is definitely shared by the relevant scientific community. It's been the subject of numerous editorials and comments by other

individuals.

Q. [214] But my question is not on this specific research, my question is when you decided to disregard results of researches or articles because you were of the view that there were some flaws in the way it was conducted, prior to making this judgement call, did you make any verification as to whether your own opinion was shared by the scientific community?

A. Yes, certainly I did.

Q. [215] And you looked at the entire scientific community or you just looked at some of the individuals active in this community?

A. Well, no one can possibly look at the entire scientific community. So, of course, I am very much involved in the community of sciences that study EMFs and that's the community for which I look at their publications, I looked at the editorials, I get information from various sources around there. But I certainly can't say that I speak for everybody in the world.

Q. [216] For sure. But do we agree and did you understand that in the context of the mandate you received looking at the general acceptance found in the scientific community on a specific topic or

question was part of what you had to do?

A. I certainly understood that I was to give an understanding, convey an understanding of the general level of scientific information on this subject. And to include in that a totally flawed study would not be meeting the obligation of that request, because that study is irrelevant to any conclusion.

LE PRÉSIDENT :

136?

Me MARIE-JOSÉE HOGUE :

Ça va être la pièce 136.

Q. [217] This document is a document entitled - Exposure to high frequency electromagnetic fields, biological effects and health consequences (100 kHz - 300 GHz). And it's a document from two thousand nine (2009). It has been issued by the International Commission on Non-Ionizing Radiation Protection. I want to know if you came across this document prior to drafting your report?

A. Yes, I have a copy of the full report.

EXHIBIT B-0136: Report entitled - Exposure to high frequency electromagnetic fields, biological effects and

health consequences (100 kHz -
300 GHz).

Q. [218] And you decided to disregard this report?

A. Well, as I've stated earlier, I have strong reasons to consider that these conclusions are not valid. I've commented on this organization, I've identified the director, Paolo Vecchia. This committee is not totally engineers and physicists, it does have health effects, we've talked about that, with the subcommittee. But it is an excessively conservative committee. This would not have been included in my report which was on the scientific research. I do believe I discuss... certainly we discuss this report extensively in... perhaps not the BioInitiative Report but... I believe we did also in the BioInitiative Report, this is two thousand and nine (2009), that was two thousand and seven (2007). Certainly it's discussed in my paper and reviews in Environmental Health.

Q. [219] Could you tell me if anybody else in the scientific community has published any negative comments on this report? I'm suggesting that there's none.

A. Oh no, that's not true, there are certainly many others that have... you know, publishing negative

comments, when you look at a scientific research article, you're not really commenting on a conclusion by a committee, which is what this is. These conclusions are referenced in a number of papers focused... and I don't know that I can quote you which ones reference them, but I'm certain that some of the ones that I've referenced here to acknowledge ICNIRP's conclusions and disagree with them.

Q. [220] I'm not talking about disagreement, because I understand that there could be disagreement between certain individuals or certain groups. I'm asking if you have any articles or editorials or anything that have been published that say that this report is not a serious one and should be completely disregarded?

A. Well, I'm not sure that we...

Q. [221] And not mentioned to the Board. That's my question, Mr. Carpenter.

A. The report is not research. I was asked to report on research. This is a recommendation of a committee. Now, let me look in my report, but I suspect that it's acknowledged in my report as well. It certainly is discussed in my publications.

Q. [222] This document is a review, Dr. Carpenter?

A. This is not a review.

Q. [223] It's entitled - Review of the scientific evidence on dosimetry, biological effects, epidemiological observations, and health consequences concerning exposure to high frequency electromagnetic fields.

A. Well, I take that back, it is a review, it does list a lot of publications.

Q. [224] It's a review.

A. I don't see that I've referenced it specifically here. But it certainly is discussed at length in the BioInitiative report, in my publication, in reviews in Environmental Health. I believe it's also referenced in my publication on the President's Cancer Panel.

Q. [225] But not here in front of this Board?

A. No. My challenge was not to talk about everybody's review article, but rather to present the state of the science.

Q. [226] Okay. And there's a certain number of reviews, you have mentioned and reported certain reviews in your own references in your report. You have some references that are references to review and even to editorial.

A. Well, I've had references to meta-analyses, I have

references to my own reviews, to the BioInitiative Report and so forth, that's correct.

Q. [227] That's correct, okay. And the conclusion of this group, and I'm reading from the bottom, because I have not filed all the pages. If anyone is interested in getting the whole article, we may file it. But the point is not to make the proof of the whole content. So, if you go at the conclusions at page 353 at the bottom,

In the last few years...

And we are in two thousand nine (2009).

... the epidemiologic evidence on mobile phone use and risk of brain and other tumours of the head has grown considerably. In our opinion, overall, the studies published to date do not demonstrate a raised risk within approximately ten (10) years of use for any tumor of the brain or any other head tumor. However, some key methodologic problems remain, for example, selective non-response and exposure misclassification. Despite these methodologic shortcomings and the still limited data on long latency

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in long-term use, the available data do not suggest that causal association between mobile phone use and fast-growing tumors, such as malignant glioma in adults. At least, those tumours with short induction period. Bla bla bla bla bla bla bla bla.

And at the end,

Currently, data are completely lacking on the potential carcinogenic effect of exposure in childhood and adolescence.

Me DOMINIQUE NEUMAN :

Excusez-moi, ma consœur dit « bla bla bla », she said « bla bla bla », maybe that was a part she should have read.

Me MARIE-JOSÉE HOGUE:

I can read everything, I'm just trying to avoid reading...

For slow-growing tumors, such as meningioma and acoustic neuroma, as well as for glioma among long-term users, the absence of association reported thus far is less conclusive because the current observation period

is still too short. Currently, data are completely lacking on the potential carcinogenic effect of exposure in childhood and adolescence.

What you're saying is you disagree with the conclusions, Sir?

A. Well, I agree with some of the conclusions. For example, the conclusion that, Studies published to date do not demonstrate a raised risk within approximately ten (10) years of use. That's referring to adult studies. I think this conclusion actually is consistent with the call for imposition of the Precautionary Principle.

Q. [228] But is it consistent with the fact that the evidence for harm from RF radiation as a cause of cancer and other diseases continue to grow?

A. It certainly is consistent with that.

Q. [229] Yes? And is it consistent with your affirmation in your first report that this link is very certain?

A. Well, the statement that this link is very certain is perhaps my personal opinion, but I do believe that that opinion is justified on the basis of the evidence I've presented.

Q. [230] How can we make the difference reading the report between your own personal opinion and the state of knowledge in the scientific community if you have decided to put aside certain articles, reviews or researches, and have not mentioned when it was just your personal opinion. How should we manage to make the difference between both?

11 h 45

A. You should read the references that I have provided. I don't believe that a review should be given the same weight, whether it is my review or these people's review. Read the references, the studies that have been done of cell phone use and cancer.

Q. [231] Okay.

A. Including the Interphone Study which is closely related to this report.

Q. [232] But where am I supposed to find the researches or the articles that you have decided not to talk about, and we'll continue with these articles and researches.

A. Well they're not going to find many that are good science, that are recent, that I have not talked about. Now if you go to the non human health effects things, then that's a huge literature and I

certainly haven't been comprehensive there. But I don't apologize at all for the selection of publications. I've chosen those I feel are the most important, the best done studies.

Q. [233] Oui, 137. I'm showing you now a report that has been made and adopted in two thousand and nine (2009), in January two thousand and nine (2009), probably made in two thousand and eight (2008), by the Scientific Committee on Emerging and Newly Identified Health Risks. Are you familiar with this report?

A. Yes, I am.

EXHIBIT B-0137: Report entitled - Scientific Committee on Emerging and Newly Identified Health Risks.

Q. [234] Okay. And if we look at the, what is the general conclusion of this report?

A. Well this is another report that dismisses concern about radio frequency fields?

Q. [235] Okay. And you have decided to disregard this report?

A. Again, this is a review article by a select committee. It is not a research article, I don't

think it contributes to the charge I had, which was what is the state of the science? This is a committee of people, I know a number of the members of that committee. They overlap considerably with the people on the ICNIRP Committee that we just talked about. They are people that acknowledge some of the studies, but they draw conclusions that the evidence is inconsistent to a degree, I agree that it is. I have acknowledged that not every study has shown risk, but I don't see that this report or the previous one that we have talked about in any way would justify failure to impose a precautionary approach to exposure to radio frequency fields.

Q. [236] Okay.

A. They are arguing that the evidence is not rock solid, I have acknowledged that. I think it's more solid than they seem to feel, but in all of them they are accepting the fact that there are scientific reports from a variety of different laboratories that demonstrate human health adverse effects associated with exposure. Now some of them they try to explain away and they may say that the results, the overwhelming body of results, aren't consistent. I don't agree with that. But certainly you can't take this report and say that we should

abandon the precautionary approach.

Q. [237] Okay. I am just quoting from the abstract,
the conclusion, if you got page 4, "Update Radio
frequency fields",

It is concluded from three independent
lines of evidence (epidemiological,
animal and in vitro studies) that
exposure to RF fields is unlikely to
lead to an increase in cancer in
humans. However, as the widespread
duration of exposure of humans to RF
fields from mobile phones is shorter
than the induction time of some
cancers, further studies are required
to identify whether considerably
longer-term (well beyond ten years)
human exposure to such phones might
pose some cancer risk.

Regarding non-carcinogenic outcomes,
several studies were performed on
subjects reporting subjective
symptoms. In the previous opinion, it
was concluded that scientific studies
had failed to provide support for a
relationship between RF exposure and

self-reported symptoms. Although an association between RF exposure and single symptoms was indicated in some new studies, taken together, there is a lack of consistency in the findings. Therefore, the conclusion that scientific studies have failed to provide support for an effect of RF fields on self-reported symptoms still holds.

You disagree that this is...

A. I don't disagree strongly with that summary. I think that summary is a strong argument for imposing the precautionary approach to radiofrequency.

Q. [238] Okay. But...

A. They are saying that they don't think that the results are as consistent as I do but they are acknowledging that there are reports of harm and they're saying we need more research, we need to study longer... We need to study people that are exposed for longer periods of time by use of cell phones and other sources. I don't see that at all inconsistent with my stated opinion.

12 h 05

Q. [239] But you have decided not to mention it in your report? For whatever reason.

A. Well, I think there are good reasons not to mention review articles there.

Q. [240] Now, we'll look at the reviews that have been made by a group of people, it's two thousand twelve (2012). And I'm quoting from the front page, it's from a group composed of I will say roughly ten (10) persons,

We conducted a systematic review of scientific studies to evaluate whether the use of wireless phones is linked to increased incidence of the brain cancer glioma or other tumors of the head...

And then there's the name of various tumors that I'm going to jump over.

... originating in the areas of the head that most absorb radiofrequency...

ta ta ta ta ta. And then, there's a conclusion.

Were you aware of this review, Mr. Carpenter?

A. No, I was not aware of this review.

Q. [241] Have you made any research to determine since the most recent researches, articles, reviews or

call it as you include all of them in the expression, are usually more important than the older ones, have you made an effort to determine whether there was any article published recently when you made your own report?

A. Well, yes, I follow the literature fairly carefully, but I did not see this review. Now, let me just point out that the lead author comes from the Department of Engineering, Electronics and Telecommunications.

Q. [242] Sure.

A. Now, Michael Repacholi is the former head of the World Health Organization EMF Program, I've mentioned him as someone that immediately left WHO, moved to a consultantship, he has this appointment in the engineering department and a consultantship with Italian utilities. The last author is Paolo Vecchia, who is the chair of ICNIRP, and I've mentioned him as well. So, these are people that have a point of view that comes from the engineering community which is that there is no adverse health effect of radiofrequency radiation and intensities, they do not cause measurable tissue heating. I wasn't aware of this review, I'll certainly look at it carefully from now on, but I

don't have to go further than looking at the
authors to know what the review would say.

Q. [243] So, we'll file it as document...

LE PRÉSIDENT :

B-0138.

Me MARIE-JOSÉE HOGUE :

138?

EXHIBIT B-0138: Report entitled - Systematic
Review of Wireless Phone Use and
Brain Cancer and Other Head
Tumors.

Q. [244] Are you familiar with the report that has
been issued by AFSSET?

A. Yes, I believe I am.

Q. [245] It has been issued in two thousand nine
(2009).

A. I believe that's actually one that was in... what
was the agency?

Q. [246] AFSSET. I'm going to show it to you,
Mr. Carpenter.

A. I'm not sure.

Q. [247] It's quite heavy.

A. It is quite heavy.

Q. [248] There's numerous pages, almost two hundred (200).

A. No, I am not familiar with this.

Q. [249] You're not familiar with this one?

A. No. Again, it's in French and my French is not very good.

Q. [250] So, you have not come across this report in making your own review?

A. That's correct.

Me DOMINIQUE NEUMAN :

It's a French report?

Me MARIE-JOSÉE HOGUE :

It's a French report.

Me DOMINIQUE NEUMAN :

Yes, okay. Dr. Carpenter has not... well, doesn't know at least the French version of it.

Me MARIE-JOSÉE HOGUE :

Q. [251] So, I understand that, actually, if there's any reports that have been published in other languages but English, have you been able to read them or not at all?

A. Well, I can read some of the German reports, and actually, I've referenced one, but I do have an English translation. But I'm not very good at languages other than English.

Q. [252] So, you have focused on the reports that have been written in English mainly?

A. That's correct.

Q. [253] And if we look at this report, it's a
Mise à jour de l'expertise relative aux
radiofréquences - Rapport d'expertise collectif -
Comité d'experts spécialisés liés à l'évaluation
des risques liés aux agents physiques, aux
nouvelles technologies, aux grands aménagements,
groupe de travail radiofréquence - Octobre 2009.
Et c'est effectivement, dans la mesure où on dit
saisie numéro 2007-007, vous aurez compris que
c'est un rapport français. Alors, je vais le...

Me DOMINIQUE NEUMAN :

Non, là, je m'objecte puisque... I'm objecting
because Dr. Carpenter is not able to identify this
report. So, we're in the cross-examination, we're
not in another part of the hearing. So, I don't see
how my consoeur can file a report on which Dr.
Carpenter can absolutely make no comment and that
he cannot read, which is because it's in French.

Me MARIE-JOSÉE HOGUE :

Moi, je peux vous dire, je veux déposer le rapport
pour démontrer qu'il existe et qu'il n'a pas été
considéré par Dr Carpenter. Et c'est quelque chose

tout à fait légitime quand le mandat d'un expert c'est de faire état du consensus de la communauté scientifique et de l'état de la littérature.

Me DOMINIQUE NEUMAN :

I would ask the Board to... I made an objection to the filing of a French document.

LE PRÉSIDENT :

On est en contre-interrogatoire, on demande au docteur, monsieur Carpenter, quels sont les documents qu'il a consultés, qu'il n'a pas consultés. Il y a un paquet de documents qui ont été déposés. Évidemment, ça ne fait pas nécessairement preuve du contenu, ça prouve de: Est-ce que j'ai consulté ou pas ces documents-là. Alors, ce document-là, le docteur Carpenter dit: « Je ne l'ai pas consulté » d'abord, pour la simple et bonne raison qu'il est en français. Alors, c'est juste ça que ça démontre au dossier, qu'il y a un rapport en français qui existe, mais qui n'a pas été consulté. Alors, la question est posée dans le contexte de qualifier le rapport de monsieur Carpenter, est-ce qu'il a... il devait informer la Régie sur l'état de la recherche sur la question de savoir si l'exposition radiofréquence qu'émettent ces compteurs cause des problèmes de santé. C'était

son mandat de faire un bilan, alors ça vient juste démontrer qu'il y a un rapport qu'il n'a pas consulté.

Me DOMINIQUE NEUMAN :

And furthermore, I don't have a copy of it. No copy of this report was given to me.

Me MARIE-JOSÉE HOGUE :

On vous en transmettra une. On la prendra puis on fera des copies. On le déposera sur le site si vous le souhaitez.

Me DOMINIQUE NEUMAN :

Can I at least have a look at it?

LE PRÉSIDENT :

Oui, oui.

Me MARIE-JOSÉE HOGUE :

Sure.

LE PRÉSIDENT :

Est-ce qu'on lui donne une cote, Maître?

Me MARIE-JOSÉE HOGUE :

Oui, on va lui donner...

Me DOMINIQUE NEUMAN :

Can you wait a second, I'll just have a look at this document. I won't read it totally, I'll just move ahead briefly.

Me MARIE-JOSÉE HOGUE :

Sans ça, on revient mercredi, quatre cents (400) pages. I would go a bit quicker.

LE PRÉSIDENT :

En fait, c'est beaucoup de papier juste pour établir le fait suivant.

Me MARIE-JOSÉE HOGUE :

Oui.

LE PRÉSIDENT :

C'est qu'il y a un rapport en français qui arrive à des conclusions X, Y, Z, puis je n'ai pas vu, mais que monsieur Carpenter n'a pas regardé quand il a fait son bilan de la recherche scientifique en question. C'est tout. Alors, je permets la question.

Me DOMINIQUE NEUMAN :

Yes. What I see here is that it's...

LE PRÉSIDENT :

La question a déjà été posée puis elle a été répondue.

Me DOMINIQUE NEUMAN :

Yes, the question...

LE PRÉSIDENT :

Je permets la production du rapport.

Me DOMINIQUE NEUMAN :

Yes. What I see here is that it's not a research per se, it's a review of the research and we've already filed... Dr. Carpenter has already filed an English review made in two thousand twelve (2012).

LE PRÉSIDENT :

Ça, je dois dire qu'il y a une espèce d'ambiguïté sur les recherches scientifiques, les rapports de recherche puis les « reviews » ou les... quand on demande à quelqu'un: Voulez-vous nous dire quel est l'état des recherches?, bon, alors, il peut y avoir trois mille (3 000) rapports. si ces trois mille (3 000) rapports-là ont été analysés par un comité scientifique qui en a fait une revue et qui arrive à des conclusions: Voici, après avoir révisé cent cinquante (150) rapports, voici ce qu'on en retient. Bien, je trouve que c'est très utile. C'est très très utile.

Alors, je ne vois pas le... il y a peut-être une mauvaise compréhension du mandat. Mais s'il y a deux ou trois rapports de revue qui font un bilan exhaustif et très correct de la littérature scientifique, bien, c'est très utile. C'est peut-être même plus utile que de se faire apporter une brouette de documents, tu sais? Alors,

voilà, il y a une ambiguïté. Moi, les « reviews », les rapports, en autant que ça fait le bilan de où en est-on sur la recherche. Je sais que pour les téléphones cellulaires, je lis moi aussi les... tu sais, je veux dire, l'Organisation mondiale de la santé est encore en train de faire des recherches à savoir si ça a des effets sur la santé sur une plus longue durée. Tout ça, ça va continuer, ça fait partie du... ça fait partie de la vie moderne. On a... je veux dire... alors, c'est ça.

Me DOMINIQUE NEUMAN :

My Point...

LE PRÉSIDENT :

Mais quand on parle à quelqu'un qui est supposé avoir donné... qui avait un mandat de donner un... faire un rapport à la Régie sur l'état des recherches scientifiques sur tel sujet, eh bien, il est tout à fait pertinent de savoir qu'est-ce qu'on a retenu, qu'est-ce qu'on a discarté, pourquoi, et c'est l'objet des questions puis des réponses depuis ce matin ça.

Me DOMINIQUE NEUMAN :

Non, je sais. But my point is that... well, I don't know if it's exactly the same content, but Dr. Carpenter has already filed a review dated two

thousand twelve (2012) which is the...

LE PRÉSIDENT :

Oui, mais ce n'est pas ça qu'est la question, c'est qu'on...

Me DOMINIQUE NEUMAN :

... which reviews possibly the same research.

Possibly it's the same research that's reviewed.

So, whether... if someone can...

LE PRÉSIDENT :

On verra. On verra...

Me DOMINIQUE NEUMAN :

... if someone can do it in French, he can do it in English.

LE PRÉSIDENT :

... on verra en argumentation.

Me DOMINIQUE NEUMAN :

Yes.

LE PRÉSIDENT :

Le seul point que ça établit, ça, c'est qu'il y a ce rapport en français, qui arrive à des conclusions, une revue, là, et le Dr Carpenter ne l'a pas consulté. Puis on comprend, si...

Me DOMINIQUE NEUMAN :

Yes. And I'm not even sure the conclusions (...).

LE PRÉSIDENT :

Alors, j'ai déjà... la question a déjà été posée, je permets la production de ce rapport. Si vous avez des arguments à soumettre, vous les soumettrez plus tard.

Me DOMINIQUE NEUMAN :

Okay, there's no problem with that, just that someone has already done that in English and it's possible the conclusions are the same in French and in English, it's just...

LE PRÉSIDENT :

Ce n'est pas ça qu'était la question. C'était: Est-ce que vous avez... voici un rapport qui est assez récent, l'avez-vous consulté? La réponse est: Non, je ne l'ai pas consulté parce que, d'abord, c'était en français. C'est tout. C'est tout ce que ça établit.

Me DOMINIQUE NEUMAN :

Yes.

LE PRÉSIDENT :

Et puis pour qu'il y ait un suivi, pour que le dossier soit complet, bien voici, le rapport est au dossier, coté, je ne sais pas, B-0139?

Me DOMINIQUE NEUMAN :

Yes.

LE PRÉSIDENT :

C'est ça?

Me DOMINIQUE NEUMAN :

Yes, but just for the... my consoeur cannot imply that Dr. Carpenter did not review other reviews because the same reviews were done in English and he has filed his document.

Me MARIE-JOSÉE HOGUE :

I'm not implying anything for the time being, take that for granted, I'm just asking questions.

LE PRÉSIDENT :

C'est ça.

Me DOMINIQUE NEUMAN :

Okay.

LE PRÉSIDENT :

Ce n'est pas la question qui avait été posée, c'est tout simplement: Avez-vous pris connaissance de ce rapport-là? La réponse est claire, simple: Non.

Me DOMINIQUE NEUMAN :

O.K.

EXHIBIT B-0139: Mise à jour de l'expertise
relative aux radiofréquences -
Rapport d'expertise collectif -
Comité d'experts spécialisés liés

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à l'évaluation des risques liés
aux agents physiques, aux
nouvelles technologies, aux
grands aménagements, groupe de
travail radiofréquence - Octobre
2009.

12 h 15

Me MARIE-JOSÉE HOGUE:

Q. [254] I have given to you two other articles, Sir,
that have been published, I m giving you a copy.
This one, it s the same, it s the same topic. The
first one is called "Absence of genotoxic potential
of 902 MHz and 1747 MHz wireless communication
signals: In vivo two-year bioassay in B6C3F1 mice."
and the other one is called "Genetic damage in
mammalian somatic cells exposed to extremely low
frequency...

LE PRÉSIDENT :

La cote peut-être.

Me MARIE-JOSÉE HOGUE :

Ah oui, on va donner la cote, pardon.

LE PRÉSIDENT :

Le premier c est B...

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Me MARIE-JOSÉE HOGUE :

140.

EXHIBIT B-0140: Absence of genotoxic potential of
902 MHz (GMS) and 1747 MHz (DCS)
wireless communication signals :
In vivo two-year bioassay in
B6C3F1 mice.

LE PRÉSIDENT :

140

Me MARIE-JOSÉE HOGUE:

Q. [255] And the other one is entitled "Genetic damage
in mammalian somatic cells exposed to extremely low
frequency electro-magnetic fields: A meta-analysis
of data from 87 publications (1990-2007)". And I am
filing it as exhibit...

LE PRÉSIDENT :

141.

Me MARIE-JOSÉE HOGUE :

Okay.

EXHIBIT B-0141: Genetic damage in mammalian
somatic cells exposed to
extremely low frequency electro-

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magnetic fields : A meta-analysis
of data from 87 publications
(1990-2007).

Me DOMINIQUE NEUMAN:

That s not what I... I was not given a copy of
this.

Me MARIE-JOSÉE HOGUE :

Non, non, je te le donne.

Me DOMINIQUE NEUMAN:

Mr. Commissioner I only have one page. I only have
the title page and it seems that the Board was
given the full document, so could I please have the
full document?

Me MARIE-JOSÉE HOGUE:

I don t think I gave him the full document. If you
want we will file the whole document. I am just
trying to identify the research, what has been
published, and I am going to ask questions as to
whether he has seen these documents, these results
before.

Me DOMINIQUE NEUMAN:

But I just want to know, what was given to the
Board and what was given to me. I m not sure...

LE PRÉSIDENT :

Ce que j'ai moi comme B-141 là, 0141, c'est

"Genetic damage in... Non?

Me MARIE-JOSÉE HOGUE :

Oui.

LE PRÉSIDENT :

O.K. Puis ça, ça a plus qu'une page là.

Me DOMINIQUE NEUMAN:

Okay, okay, so this has more than one page and the
previous document, was it just one page?

LE PRÉSIDENT :

L'autre, l'autre c'est "Absence of genotoxic
potential" et caetera.

Me MARIE-JOSÉE HOGUE:

And it's three pages.

Me DOMINIQUE NEUMAN:

Was it the full article or just one...

LE PRÉSIDENT :

Bien ça a trois pages là.

Me MARIE-JOSÉE HOGUE :

C'est « l'abstract ».

Me DOMINIQUE NEUMAN :

O.K.

LE PRÉSIDENT :

Ça va?

Me DOMINIQUE NEUMAN :

Oui.

LE PRÉSIDENT :

O.K. Merci.

Me MARIE-JOSÉE HOGUE:

Q. [256] So I would like to know if these two documents have been published in two thousand and nine (2009)? Both of them. One in March, the other one in May. Have you come across these reports before? Or these articles I should say?

A. Yes. The one "Genetic damage in mammalian somatic cells" is referenced in my report.

Q. [257] Okay.

A. I m trying to find whether... The advantage of that is that it is a meta-analysis of sixty-three (63) publications but ending in two thousand and five (2005), so the second document for which there is an abstract would not have been included in that meta-analysis. I don t recall being familiar with the second document, the one by Ziemann, I did submit a huge list of references in this, what was it, Powerwatch, and I don t know whether it s there yet. I haven t been able to find it on my computer but, in any case, this illustrates why I would select the meta-analysis which is someone else s

summary of sixty-three (63) publications, and discuss that in fair detail in my report, which I do.

Q. [258] Okay.

A. And not discuss every finding of either finding positive or negative results and we went through that document at fair length yesterday about the yes, no, and in terms of genetic damage, I think I specifically commented there that probably the majority of studies that have looked for specific genes induced up-regulated or down-regulated did not report positive results.

Q. [259] Okay. And this...

Me DOMINIQUE NEUMAN:

Excuse me, as a reference, to help the Régie, B-0141, you already have it Mr. Commissioner, it s already filed by Mr. Carpenter as part of Exhibit SÉ-AQLPA 7, Document 28. It s 0099. It s the documents that are referred to in section 44, section 44 of Dr. Carpenter s revised report to you. The Board already has that document, already had it the first time.

Me MARIE-JOSÉE HOGUE:

Q. [260] The one that you have referred to in your report, Sir, and the reference is at page 22.

A. Page 22.

Q. [261] And I am getting from the fact that you have cited the report that the authors are worth being, being cited, in the sense that you did exercise your judgement as to the merit of what has been done as being concluding that these people were serious people.

A. Well, Radiation Research is a very high quality journal. It s focused more on ionising radiation than non-ionising radiation. I would look seriously at any article published in that journal. It s not, it s a relatively conservative journal so I don t always agree with them, but I would certainly cite them and I think this is a very good paper and it concludes that...

Q. [262] I m not sure you are looking at the one that you have referred to in your report.

A. Two thousand and eight (2008).

Q. [263] The one that you have referred to in your report is two thousand and nine (2009).

A. Two thousand and nine (2009). No, this is a different article, I m sorry.

LE PRÉSIDENT :

Celui, ce document, je vous ai perdu un peu là.

Me MARIE-JOSÉE HOGUE :

Oui.

LE PRÉSIDENT :

On est à la page 22 du rapport?

Me MARIE-JOSÉE HOGUE :

La page 22 du rapport.

LE PRÉSIDENT :

C est lequel? C est celui qui est en bas de la page
là?

Me MARIE-JOSÉE HOGUE :

Celui qui est en bas de la page.

LE PRÉSIDENT :

O.K.

Me MARIE-JOSÉE HOGUE :

Vijayalaxmi.

LE PRÉSIDENT :

Oui, O.K. On va vous épargner les détails. O.K.

C est correct, là, je vous suis.

Me MARIE-JOSÉE HOGUE:

Q. [264] And I am suggesting that the report that you
have referred to in your own report is an article
dealing with the sixty (60) hertz. Do you agree
with me?

Me DOMINIQUE NEUMAN:

It seems to me, it seems to me the same that my

consoeur has filed.

A. Yes, apparently it is, from the title.

Me DOMINIQUE NEUMAN:

It has the same title, the same pages, it s the same name of journal.

Me MARIE-JOSÉE HOGUE:

No, this is what I said. It s the same than the one he referred to in his report. I m asking if I m correct in saying that it refers to sixty (60) hertz. A study that has been made on sixty (60) hertz. Not on radiofrequency. And actually another one has been done by the same author on radiofrequency and I am going to give you a copy of the report, B-0142.

Me DOMINIQUE NEUMAN:

Thank you.

Me MARIE-JOSÉE HOGUE :

Je pense que je peux vous en trouver un. Alors...

Q. [265] The one that you referred to Mr. Carpenter, in your own report, is the one that is entitled "Genetic damage in mammalian somatic cells exposed to extremely low frequency electro-magnetic fields: A meta-analysis of data from 87 publications" and it has been published in the volume 85, No. 3, March 2009 of the International Journal of

Radiation, radiology, I think, the exact word. I...

A. You are correct on that.

EXHIBIT B-0142: Report entitled - Genetic Damage
in Mammalian Somatic Cells
Exposed to Radiofrequency
Radiation : A Meta-analysis of
Data from 63 publications (1990-
2005).

Q. [266] I... Okay.

A. And I think that is an error because this is the
paper I meant to include there. This... The one you
have handed me which is a two thousand and eight
(2008) meta-analysis on the radiofrequency results.
And as a matter of fact, I think I quoted the
statement from this article but referenced the
wrong one. But the critical statement is that the
overall data indicate that the difference between
radiofrequency exposed and sham-exposed due to
radio, to RF radiation is small with few
exceptions, but at certain RF radiation exposure
conditions they are statistically significant
increases in genotoxicity for some end points.

12 h 25

Q. [267] So, what you're saying is that you have cited...

A. I quoted from this paper but referenced the wrong one.

Q. [268] But referenced the wrong one?

A. The authors are exactly the same, it's just... the titles even look alike, they're just, one's ELF and one's RF.

Q. [269] And have you also cited the author mentioned that appear in this report? Just bring us to the exact citation in your report.

A. My citation for the wrong article, you mean?

Q. [270] Yes, because you said, "I cited the right portion, but I cited the wrong article"?

A. Yes, it's under F3, under... let me find which number. 44 f.3.

Q. [271] Okay, but there's no quote? You haven't quoted anything from the report?

A. No.

Q. [272] Okay. If we look at the report, the one that is the right one, actually.

A. Yes.

Q. [273] Okay? C'est... Je ne les ai pas indiqués. The one that have been published in Radiation Research?

A. Yes.

Q. [274] 169, is it the right one?

A. Yes, that's the one (???).

Q. [275] Okay. It's at the top left. Then, there's...

142. Then, there's three conclusions. The overall
data indicated that the... first conclusion,

The difference between RF radiation
exposed and sham unexposed controls as
well as the effect size or
standardized mean difference due to RF
radiation exposure was small with very
few exceptions.

First conclusion.

A. Yes.

Q. [276] Second conclusion,

At certain RF radiation exposure,
conditions, there were statistically
significant increases in genotoxicity
for some end points.

And three,

The mean indices for chromosomal
aberration and micronuclei in RF
radiation exposed and sham unexposed
controls were within the spontaneous
levels reported in the historical
database. Considerable evidence for

publication bias was found in the
meta-analysis.

And I understand that you have cited this article
in support of the affirmation that you have made at
44, that the following studies explain the
mechanism of interaction between RF and the volume
of radiation in biological system at the cellular
level, and then you have cited a certain number of
articles?

A. Yes.

Q. [277] So, did you want to draw the attention of the
Board to the three conclusions or only to one of
them? Are you...

A. No, I would like to draw the attention to the three
conclusions. I agree with all of them.

Q. [278] You agree with the three conclusions?

A. Yes. I agree that the effects are relatively
inconsistent. When there are positive effects,
they're small. But in these analyses they're
statistically significant. And I think the last
statement that there's considerable evidence for
bias is also important. Now, there's some
discussion at the end of this article about what
the various causes of bias are, and they're both
biases in terms of experimental design and

publication bias. So, that's not a totally positive article, but it is in the meta-analysis, and I think exactly the kind of report that I would like to draw the attention of the Board.

Q. [279] Okay. You also draw the attention of the Board yesterday to an article that is called "Mobile phone use and the risk of tumours", a meta-analysis, and it has been published by Myung, M-Y-U-N-G, and I'm going to ask maître Neuman to help me with the number, because I'm not sure what is the number that you gave to this document, and I would like the Régisseur to take a look at it.

A. Well, that is referenced in section 39.

Q. [280] It's 39?

A. Number C.

Q. [281] Yes. But I would like you to go at the document itself, that you were using yesterday.

Me DOMINIQUE NEUMAN:

I'm always ready to help. So, it's SE-AQLPA-7, document 19. And it's 0090.

Q. [282] That's Myung, right?

A. Yes.

Me MARIE-JOSÉE HOGUE:

Q. [283] Do you have it, Mr. Carpenter?

A. On my computer it has only the cover sheet, it

doesn't have the article.

LE PRÉSIDENT :

Je pensais au déjeuner, est-ce que vous avez le temps de finir avant le déjeuner, ou si...

Me MARIE-JOSÉE HOGUE :

Oui, parce que si je fais... Je ne finis pas tout mon contre-interrogatoire.

LE PRÉSIDENT :

Non?

Me MARIE-JOSÉE HOGUE :

Mais si je finis avec cet article-là, ensuite je passe à Interphone.

LE PRÉSIDENT :

O.K. Oui, ça va.

Me MARIE-JOSÉE HOGUE :

Alors, on peut peut-être juste finir ça, puis...

LE PRÉSIDENT :

D'accord.

Me MARIE-JOSÉE HOGUE :

... prendre le temps pour le déjeuner par la suite.

A. I'm sorry, I don't have it. I have the cover sheet in my computer, but not the article.

Q. [284] Okay. I'm going to give you my copy.

Me DOMINIQUE NEUMAN:

Is it possible that only the cover sheet was filed?

Okay.

LE PRÉSIDENT :

Votre document 0090, là...

Me DOMINIQUE NEUMAN:

Yes, I'll need to replace the document, because I have the study here, but for some reason there was possibly a mistake done in the... I hope it's the only one with that characteristic. So, I'll...

Me MARIE-JOSÉE HOGUE:

But do you have the page starting at the left, methods?

Me DOMINIQUE NEUMAN:

No, the page... The document was not attached to it, it was a clerical error. So, if the Board permits, I'll file the document at a later time.

Me MARIE-JOSÉE HOGUE:

Q. [285] You mention in your report that actually in this article, in this research, this meta-analysis...

A. Right.

Q. [286] The authors reviewed four hundred sixty-five (465) publications and reported on twelve thousand three hundred forty-four (12,344) cases of cancer and twenty-five thousand five hundred seventy-two (25,572) controls. When I looked at the articles,

my understanding is that actually, there have been forty-three (43) articles that have been reviewed, because all the others have been excluded for a variety of reasons. If you go at page... at the figure 1, and you have it on the top, actually...

A. Yes.

Q. [287] Result of four hundred sixty-five (465) articles meeting our initial criteria, twenty-three (23) case control studies, which involved thirty-seven thousand nine hundred sixteen (37,916) participants, twelve thousand three hundred forty-four (12,344) patient cases and twenty-five thousand five hundred seventy-two (25,572) controls were included.

So, I'm getting from that that it's inaccurate to say that four hundred sixty-five (465) publications have been reviewed and that they reported on twelve thousand three hundred forty-four (12,344) cases. Do you agree with me that it's rather forty-three (43) articles that have been kept for review?

Twenty-three (23)?

A. Well, I agree and disagree. This is what a meta-analysis is. You look at the total literature and

then you determine whether or not articles that you review are appropriate to include in the meta-analysis. And these are respected investigators. And this is an excellent journal. But it's true in all meta-analyses that you do not include in your final data analysis, which these authors did not, everything that's been published. You look to see whether there are flaws in the design. In this case they were looking for case controls studies. And so, the significant results they report are on many fewer studies and many fewer people. That is absolutely correct.

Q. [288] Okay, but just go at figure 1. Have you noticed, actually, in making your review, that they were amongst the four hundred sixty five (465)...

A. I know this paper very well, so yes.

Q. [289] ... sixty-five (65) original publications? There were one hundred thirty-five (135) articles that were excluded because they were duplicates?

A. Yes, I didn't notice that.

Q. [290] You didn't notice? Okay.

A. Why they would be included in their summary, I don't understand.

Q. [291] Okay. Could you just tell the Court how did you proceed when you read an article and then made

comments in the report. Did you go through the entire article and verify all the aspects of the article or did you limit your review to the conclusions of the report as well as to the methodology?

A. Well, I certainly can't say that in every reference I've included here that I've read every word very carefully. My standard way of reviewing articles is to read the abstract, read the conclusions, usually read the discussion, because that's where flaws are often discussed. I don't understand this business of duplicates because that doesn't belong in the article at all and I did not see that. I know the senior author of this article and have a high regard for him, and again, it's in a good journal. But it is a little bit deceiving to count duplicates as separate articles.

Q. [292] Okay. If you go at the result, the odds ratio for the overall use was zero point ninety-eight (0.98), so it's below one.

12 h 35

A. Yes, consistent with everything else we know, because this is "having ever used a cell phone or having never used a cell phone", and it does not deal with latency. When he says mobile phone use

for ten (10) years or longer was associated with risk of tumours in thirteen (13) studies, with an odds ratio of one point one eight (1.18) that was statistically significant.

Q. [293] Okay. Is there a reason why you have not mentioned that the odds ratio for the overall use was point ninety-eight (0.98)? You just have mentioned the odds ratio for use for more than ten (10) years. Is there a specific reason why you have not mentioned it?

A. Yes, because there's overwhelming evidence that the latency between exposure and development of brain tumors is very long. So, there have been numerous studies which I didn't mention, including studies in the U.S., that show there's no elevation in risk of brain tumors in adults that have use cell phones for less than ten (10) years.

Q. [294] Okay. And where did you get the one point eight (1.8)? I would like to...

A. One point one eight (1.18), that's what he states in the...

Q. [295] No, it's... What you stated in your report is one point eight (1.8), and I don't see the one point eight (1.8) in the result.

A. I suspect that's a typographic error, because it's

one point one eight (1.18). It must be just a typo, because it's one point one eight (1.18). But statistically significant, which is clearly stated in the abstract.

Q. [296] Just at the limit. The limit is one? For being statistically significant, it's one?

A. Well, to be... If the odds ratio is one, there is no effect.

Q. [297] No effect?

A. If the odds ratio has a ninety-five percent (95%) confidence limit, where the lower bound, the lower number is less than one point zero zero (1.00), it's not significant. So, this has a ninety-five percent (95%) confidence limit of one point zero four (1.04) to one point three four (1.34). So, it is statistically significant. The confidence interval is relatively small, so while it's only an eighteen percent (18%) increase in risk that they report from these studies, it has a tight confidence limit and is highly statistically significant.

Q. [298] And a one point eight (1.8), by opposition to one point eighteen (1.18), at point eight (1.8) we're talking about...

A. That's the difference.

Q. [299] Eighty percent (80%).

A. Yes, and that's... I apologize for that, that's clearly a typographic error.

Q. [300] Okay. Alors, on pourra continuer après le déjeuner.

LE PRÉSIDENT :

Alors, merci. Alors, on va reprendre à quatorze heures (14 h 00).

Me DOMINIQUE NEUMAN :

Est-ce que le Tribunal me permettrait de prendre le grand document, là? Parce que comme je n'en ai pas copie, si j'ai un réinterrogatoire, peut-être qu'il y a quelque chose qui me... qui m'amènera une question en réinterrogatoire.

LE PRÉSIDENT :

Oui, oui, vous pouvez le consulter, il n'y a pas de problème.

Me DOMINIQUE NEUMAN :

Merci.

SUSPENSION

14 h 05

UPON RESUMING

Me DOMINIQUE NEUMAN :

Monsieur le Régisseur, je m'excuse pour le délai.

Nous avons emprunté pendant l'heure du midi le très grand rapport français et nous l'avons tellement aimé que nous sommes en train d'en faire photocopier des extraits pour pouvoir en discuter davantage.

LE PRÉSIDENT :

Excellent, excellent, excellent. Parlant de discuter davantage, là, il est vendredi, c'est la veille d'un long week-end. Je souhaiterais, puis je soupçonnerais que je ne serais pas le seul, qu'on puisse terminer à quatre heures (16 h 00). Je ne veux pas empêcher personne de parler, si ce n'est pas fini à quatre heures (16 h 00), là, ça ira à mardi matin. D'accord? Peut-être qu'on peut terminer à quatre heures (16 h 00), là? Bon. Alors, allons-y.

Me MARIE-JOSÉE HOGUE :

Q. [301] Alors... Mr. Carpenter, I would like to go now at your paragraph 39 of your report, and especially at 39 d., the Interphone Study Group. And...

Me DOMINIQUE NEUMAN :

Just for the record, it's 0091, SE-AQLPA-7, document 20, 0091.

Me MARIE-JOSÉE HOGUE :

- Q. [302] And I'm reading your report, and actually you're suggesting that the result of the report has shown no increased risk of brain cancer between the ever and the never using a cell phone. But a significant odds ratio of two point eighteen (2.18) for use for ten (10) or more years, an odds ratio of one point eighty-two (1.82) for use for one thousand six forty (1,640) hours or more, and an odds ratio of one point thirty-one (1.31) for more than two hundred and seventy (270) calls, for glioma. Am I right in suggesting that actually the main study, I'm always talking about the Interphone Study, led to odds ratio much lower than these ones, and that the ratio that you referred to in your report are actually the ratio that have been found and published in Annex 2 of the report, which have been done for trying to explain or to see why the result of the main study were not what was expected at the outset?
- A. Well, you're certainly correct that the results I reported are in Annex 2 of the report. I probably shouldn't comment on the reason they're in the Annex 2. I suspect the reason is not what you suggest, rather an attempt to hide the results.

Q. [303] Okay. You think it's an attempt to hide the results?

A. Absolutely.

Q. [304] Okay, that's your reading of the...

A. Well, that's my personal opinion. It's the opinion expressed by a number of other people as well. But when you have results that are totally consistent with previous studies, why would you put them in an appendix online and not in the main body of the paper?

Q. [305] Okay, because do you agree with me that the conclusion of the main study, of the Interphone Study, the main study led to result where all the odds ratio were actually not significantly... statistically not significant?

A. Well, that's not really true. And that's one of the curious things, it's they were statistically significant, but they suggested that having ever used a cell phone reduced your risk of brain cancer. And that has no... That simply cannot be, as the authors acknowledged. And so, the authors interpret, and I think almost everybody that reads these reports carefully concludes that there was some flaw in the design of the study that led to this impossible conclusion, that having ever used a

cell phone, just even for one time, reduced your risk of brain cancer. That got to be a major part of the published article, and I probably shouldn't have made that comment. It is my personal opinion that they were trying to hide results, but the major part of this paper is focussed on use of cell phones for less than ten (10) years. And in fairness to the authors, they do in their concluding statement allude to the fact that there are suggestions for increased risk of glioma at the highest exposure levels. But then, they say but biases and errors prevented a causal interpretation. But they say that the possible effect of long-term heavy use of mobile phones requires further investigation.

Q. [306] I would like to go to the results of the main study, Sir. It's appearing on the front page, results.

A. Yes.

Q. [307] Okay? And I would like you to look at the odds ratio that they have achieved, actually, through the main study.

A. Well, it says the reduced odds ratio related to ever having used a regular mobile phone user was seen for glioma, where the odds ratio was zero

point eight one (0.81), the ninety-five percent (95%) confidence limit, zero point seven oh (0.70) to zero point nine four (0.94). So, that is a statistically significant result, but it suggests that ever having used a cell phone reduces your risk of brain cancer.

Q. [308] Okay. It's not a significant result for any connection between the use of the cell phones and the increase of cancer?

14 h 11

A. No, that certainly does not demonstrate an increase in cancer.

Q. [309] Okay. And just continue afterwards.

A. And then... That's for glioma, and for meningioma the odds ratio is zero point seven nine (0.79). The ninety-five percent (95%) confidence limit was zero point six eight (0.68) to zero point nine one (0.91). Again, a statistically significant result.

Q. [310] Not for showing a link between increase in cancer and the use of cell phone?

A. No, implying that ever having used a cell phone reduces your risk.

Q. [311] Okay.

A. And they say, "possibly reflecting participation bias or some other methodological limitation", so

the authors are saying "this can't be".

Q. [312] Okay. And that is a fair way of saying things? If you think that there could be a bias or anything that affects the result, it's important to mention it?

A. No, absolutely right. And when you get a result that has no biological plausibility, then you must suspect that there's some flaw in your project design, a bias, an error in the design. And this result has certainly led many people to discount the whole study, because this is not a plausible observation, this cannot really be that having ever used a cell phone reduces your risk of brain cancer.

Q. [313] Continue. No elevated odds ratio was observed for more than ten (10) years after first phone use. And then, we have an odds ratio of point ninety-eight (0.98) at ninety-five percent (95%). Again, it doesn't show any link between any increase in cancer and the use of cellular for more than ten (10) years. Do you agree with me?

A. Well, I agree that that's what it says.

Q. [314] Okay.

A. But that statement is totally contradicted by the material in Appendix 2.

Q. [315] Okay, we'll go there afterwards.

A. Yes.

Q. [316] Okay. Those are the result of the main study.

And if we continue, just tell me which one, because you mentioned that they were statistically significant, is there anyone in the main, the result of the main study, that were statistically significant for... vis-à-vis a link between the use of the cells and the increase in cancer?

A. Well, there's a statement, in the tenth decile of recalled cumulative call time of greater than one thousand six hundred and forty (1,640) hours, there was... the odds ratio was one point for zero (1.40), ninety-five percent (95%) confidence limit, one point zero three (1.03) to one point eight nine (1.89) for glioma.

Q. [317] Okay.

A. That is a statistically significant result.

Q. [318] Okay. Those are the results that from the main study you identify as being statistically significant?

A. Yes.

Q. [319] When I look at your text, at the report, at d., 39 d., what I see actually is figures coming from the appendix, but I don't see any reference in

your report to the results attained through the main study, nor to the fact that the figures you use are coming from an appendix. Why is it?

A. Well, because that's where the real data is presented. Most of the material in the main report, with one exception, is for a use under ever used, so it is not dependant on duration of use. The results that provide the full data on use of cell phones for more than ten (10) years, for numbers of total calls and so forth, that's all found in the appendix.

Q. [320] Okay. Do you agree with me, Mr. Carpenter, that that is your own conclusion? Because clearly, the authors of the main study have concluded that the results were those appearing at the front page of the study?

A. No, I do not agree with that at all.

Q. [321] Okay.

A. Those are the results of the study. They were put in the second appendix for reasons that are very suspicious, but they're as much, if not more, the results of the study than anything that appears on the first page of the main article.

Q. [322] Okay. So, I'm asking the same question that I asked earlier, why haven't you mentioned in your

report that actually the results that you were referring to were not the results appearing from the main study, but rather from an appendix? There's no reference at all in your report to what you are now alluding to.

A. Well, I don't think it makes any difference, whether the data came from the main report or the appendix. It was published at the same time. It's common practice in scientific journals, you publish ancillary data in an appendix. In this case, they chose to publish the most important observations in the appendix. Now, it's certainly appropriate in the main paper to try to explain why they got statistically significant results implying lesser risks, and a lot of the text is that. But it isn't that this is a subsequent report or anything else, this is a major result of the paper.

Q. [323] Okay. I want you to go at Appendix 2, and especially at the last paragraph of Appendix 2, the conclusion of Appendix 2. I understand that is the conclusion of the authors? Si vous êtes dans le grand document qui a été déposé par AQLPA, c'est à la page... oups, ça recommence, la numérotation. Ça arrête, et ensuite on est à la page 3 de l'appendix 2. There's a mention by the authors of the study

saying,

Analyses excluding never regular user of mobile phones may have reduced downward bias in odds ratios for meningioma and glioma due to selective non-participation of people who were never regular users. There is evidence, however, of persisting bias in the results of these analyses and it is possible that the exclusion of never regular users has produced upward bias in the odds ratios, particularly for glioma. Thus biases and error prevent a causal interpretation of these results.

14 h 20

I have seen absolutely no mention of this conclusion of the authors in the reference you made in your report to the Interphone Study. Is there a specific reason why you have not seen fit or appropriate to indicate this conclusion of the authors since you're telling me it's important to indicate, as they did with the main study, when they feel that there could be a bias?

A. Well, I don't consider that conclusion statement to

say anything of any importance. They focused primarily on discussing biases in the study design that led to this result that's not biologically plausible, that ever having used a cell phone protects you against brain cancer.

Now, there is a discussion throughout of biases. In my report, I don't go into biases but I say controversy around the report. And I have really quite a long section that discusses the controversy.

Now, the fact is that if there was some systemic bias that led to the impossible conclusion that ever having used a cell phone protected you against brain cancer, it is likely that the actual elevation in risk throughout and for long-term usage, many hours, many calls, more than ten (10) years, that that is a significant underestimation of risk.

Now, the biases they're talking about here, which I have acknowledged in other statements that I've made, there's concern that if you have a brain tumor you're more likely to exaggerate the number of hours you were on the phone ten (10) years ago than if you don't have a brain tumour. That was the subject of a specific report by Elizabeth Cardis,

who was the lead administrator. She had the role in the Interphone Study that I had in the New York State power lines project. And she determined that the results of the Interphone Study, while there were possible biases one way or the other, that the results could not be explained on the basis of biases. So, I think it's appropriate for the authors to say, you know, there's a possibility of biases.

Q. [324] Okay, but you decided by yourself, that it was not appropriate to inform the Board that actually the authors themselves of this article, of this research that you cited had issued the conclusion that they had issued. It's yourself who made the decision not to mention it?

A. Absolutely not. Absolutely not. There's discussion of biases throughout this. There are possibilities of bias in every study. That statement in no way invalidates the conclusions of this report.

Me DOMINIQUE NEUMAN :

Excusez. I think at this point my consoeur should simply asked Dr. Carpenter to read what he actually wrote on the subject, which is exactly what my consoeur is talking about. He wrote it in his report, in the paragraph d., which is in page 15 of

his report. He actually talked about everything that my consoeur is asking.

Me MARIE-JOSÉE HOGUE :

I'm sorry. It's not what I'm reading, but I keep it for the argument. We'll see where it will bring us.

Q. [325] You are making reference in your report, at the top of page 15, that for... there's an odds ratio of one point thirty-one (1.31) for more than two hundred seventy (270) calls. I'm suggesting to you that if we look at the report, actually it's twenty-seven thousand (27,000) calls, and not two hundred seventy (270) calls. Am I right? Is it a typo? It's table 2.

Me DOMINIQUE NEUMAN :

If it may help, I think my consoeur does not have the revised version of Dr. Carpenter in front of her.

Me MARIE-JOSÉE HOGUE :

I want to know if it's a typo.

Me DOMINIQUE NEUMAN :

That might be because... The last few questions.

A. I don't believe that is in table 2. That's the total of years. Table 3 is hours.

Me MARIE-JOSÉE HOGUE :

Q. [326] Look at the end of table 2, cumulative number

of calls with no hands-free devices. It's in hundreds. So, it's two hundred seventy (270), but in hundreds, which means it's twenty-seven thousand (27,000) calls. Is it a typo in your report?

Because even in your revised report, I have both.

A. Well, I'm not finding it, but I suspect... I mean, two hundred and seventy (270) calls is too small a number.

Q. [327] Okay. Go at table 2.

A. I suspect I... I am at table 2, but...

Q. [328] Okay. You see, there's four titles in bold, the last one is "cumulative number of calls with no hands-free devices". Do you see it?

A. Appendix, table 2? No, I...

Q. [329] No, no, in the main report, Sir.

A. Oh, I'm sorry.

Q. [330] I'm working with the main report.

A. I'm working on the appendix.

Q. [331] Go at table...

A. I suspect I read that wrong and I didn't see the times a hundred. But it makes better sense because two hundred and seventy (270) calls is not a lot.

Q. [332] Okay. So, it's a typo. It should be read twenty-seven thousand (27,000)?

A. It should be read in hundreds, yes, it's two

hundred and seventy thousand (270,000) calls.

Q. [333] You have mentioned, and I'm going now at paragraph 40 of your report, and you pointed out during your testimony the McCarty study. It's paragraph 40 b.

14 h 25

A. Yes.

Q. [334] And you mentioned that this study was one that you have found very important. Am I right in saying that this study was made on a single subject, one person?

A. Yes, you are right.

Q. [335] Are you familiar with the article that has been published by a group headed by James Rubin from King's College in London? I'm going to show it to you. And prior to discussing this article, the one that you have cited was dealing with sixty (60) hertz?

A. Yes, it was.

Q. [336] Okay.

A. Just a minute. No, I think that's not correct, but let me check.

Q. [337] Have you found it? No?

A. Unfortunately, it's on my CD and it's taking a while to come up.

Q. [338] Oh, it's okay, I just want to make sure that you have the time to...

A. I'm looking for it. For some reason it's not coming up. Well, my statement doesn't state, I'm almost positive that this was RF, but I can't be sure unless I confirm on the article.

Q. [339] So, we'll come back to it after.

A. Okay.

Q. [340] So, I gave you a copy of the review that has been made by Rubin and company.

A. Right.

EXHIBIT B-0143: Report entitled - Idiopathic
Environmental Intolerance
Attributed to Electromagnetic
Fields (Formerly Eletromagnetic
hypersensitivity): An Updated
Systematic Review of Provocation
Studies.

Q. [341] Were you aware of this review?

A. Yes, I have copies of that review.

Q. [342] You had copies before?

A. Yes.

Q. [343] And you agree with me that actually they have

reviewed a large number, a good number, I don't want to determine whether it's large or not, but a good number of studies that have been conducted on the same topic?

A. Yes.

Q. [344] And the results are completely different than the ones you have mentioned with the McCarty study?

A. Yes, and let me comment on that, because at the time... before the McCarty study appeared, I would have agreed totally with this review. As a matter of fact, I have been berated by some of the advocates in the EMF community for expressing skepticism as to whether this electromagnetic hypersensitivity syndrome existed. There have been several reports published in good journals where individuals have reported themselves to be hypersensitive were taken into laboratory settings and were unable to tell the investigator whether or not the fields were on.

The reason the McCarty study is so important is that this was the first time a really carefully-controlled study was done. The subject was one person but it was a female physician. she was taken into a neurology clinic, complete with brain imaging technology, and in a blinded fashion,

was either exposed, and I'm almost positive it was cell phone frequency -- I don't understand why my CD won't rise -- but she was able to distinguish by reporting headaches when the fields were on, in a statistically significant fashion. And they, at several times, applied the fields on, fields were not on, on, not on. They also did the study, and this is why I'm almost positive it's RF.

Q. [345] I'm going to show you actually the article...

A. Good.

Q. [346] ... because I'm suggesting it's not RF.

A. Well, it may be.

Q. [347] Take a look.

A. Yes, it's a sixty (60) hertz electric field.

Q. [348] Which...

A. It's not RF.

Q. [349] It's not RF.

A. Yes. But there are reports of electrical hypersensitivity, both from ELF and RF. And I've had great skepticism about whether it was a real syndrome until this particular paper. Because I think this is done the way it should be done, in a blinded fashion, the subject didn't know whether the fields were on or not, and she did correctly, in a statistically significant fashion, demonstrate

that she had headaches or other symptoms when the fields were on and did not when the fields were not on.

Now, I have hardly talked about electrical hypersensitivity in my report. I suspect that it's real, and my suspicion that it's real has grown stronger because of that particular article. But, you know, as I say, I'm certainly on the record as having been skeptical up until now.

14 h 30

I get calls from people all the time with this syndrome and it s hard to evaluate.

Q. [350] Okay. Is there any reason why you did not mention when you referred to McCarty that it was not a study dealing with RF but rather with sixty (60) hertz?

A. No, and I should have because...

Q. [351] You should have.

A. I should have, it should not have been under the heading of low dose chronic exposure to RF.

Q. [352] Okay. And at paragraph 34 of your report you mention, "There is also abundant literature showing that some individuals, described as electrosensitive, may encounter symptoms more intense than other individuals." Since you made the

reference to McCarty and given this paragraph, is there a reason why you have not seen fit to mention to the Board the existence of this review from Rubin in which forty-six (46) studies involving one thousand one hundred seventy-five (1,175) volunteers have been reviewed and all these studies were also in the context of blind, or even double blind, situation. Why is it not mentioned anywhere? And the conclusion is negative in the Rubin, by the way.

A. Yes, yes. I mean, I briefly acknowledged that there are studies on electro hypersensitivity. At the time I wrote the report, I didn't feel that there was sufficiently strong evidence to elaborate on them. I did include the McCarty paper because it is one of the first positive but well done studies. The major health effects of concern from my perspective, while electro hypersensitivity, if it really exists, may affect a large number of people, the diseases of greatest concern are cancers.

Q. [353] Okay. But why is it, because in paragraph 34 you are saying that actually there is abundant literature showing that some individuals described as electrosensitive may encounter symptoms more intense than other individuals. Are you suggesting

in this sentence that actually there is literature, abundant literature, contradicting the results that we see in the review made by Rubin? Is it what you were suggesting or is it just the way the sentence was drafted that seems to...

A. I think it s the way the sentence was drafted because I m saying "may". These reports that I am referencing here were not blinded, they are usually individual reports, I don t give them much credence. And that s why there are no references there.

Q. [354] There is also another review that has been done again by Rubin but this time, just... J ai oublié de m en garder une. Merci. - But this time published in two thousand and eleven (2011). Ça va être la cote 144. Is it a review that you were aware of before drafting your report?

A. Yes, it is.

EXHIBIT B-0144: Report entitled - Do People with
Idiopathic Environmental
Intolerance Attributed to
Electromagnetic Fields Display
Physiological Effects When
Exposed to Electromagnetic

Fields? A Systematic Review of
Provocation Studies.

Q. [355] And could you tell the Board, how many
studies were reviewed by this group?

A. They identified twenty-nine (29) single or double
blinded experiments.

Q. [356] Twenty-nine (29) single or double blinded
experiments. So it s the same type of situation
where the experiments are blinded?

A. Yes.

Q. [357] Okay. And is there a reason why, again, this
one was not mentioned at all in your report?

A. Well, my report doesn t deal at any great length
with electrical hypersensitivity and the reason for
that was that, you know, with the exception of that
one McCarty article, there is in my judgement, no
significant evidence in credible scientific studies
that confirms it. Now there are many reports that
imply that people s memory loss, lack of sleep and
so forth, is due to some exposure to EMF but, you
know, I don t. I did not find those reports to be
very credible. So I really didn t present, except
for that one reference and a couple of papers on
sleep disturbances, I didn t present the literature

on this particular subject.

Q. [358] Okay. Do you agree with me that the World Health Organization has expressed the position that the electromagnetic hypersensitivity has no scientific basis?

A. Well, no, I don't quite agree with that characterization of it. The World Health Organization held a whole conference on electro hypersensitivity and there is a report that is listed, identified in my report. It's a very non-judgmental report. It says that there are a lot of people that think they're ill because of exposure to EMFs. It doesn't say whether it's justified or not justified and, with the exception of that one reference I would agree that that is the conclusion I would draw from the scientific literature on that particular subject.

Q. [359] Okay. But are you aware of the official position taken by the World Health Organization to the effect that there is no scientific basis to link the electro sensitivity symptoms to the EMFs exposure? If you're not aware just...

14 h 39

A. I'm not aware of that particular statement. As a matter of fact, my impression is that this is not

what they say but the document... oh, I apparently don't have it handy, but the World Health Organization has certainly not come out and said that this is a major Public Health issue, I would agree with that. But I would not confirm, at least without seeing in writing, that they said there's no scientific basis for it.

On the other hand, confirmation requires a scientific basis, so perhaps they said that.

Q. [360] You have not mentioned the review made by Rubin, but the two reviews actually made by Rubin encompasses a large number of studies themselves. Is there a reason why these studies have not been mentioned in your report, not the review but the studies themselves?

A. I really avoid the issue of electro hypersensitivity in my report. I don't think that it rises to the same level of concern as some of the other concerns, like cancer. And by omission, I was basically saying that when I prepared the report, I didn't think there was strong evidence for there being an association.

Q. [361] I'm going at paragraph 40 of your report, Sir, where you cite a number of articles which, in your view, or at least based on the first portion

of paragraph 40, show various adverse health effects from low dose chronic exposure to RF. And you're citing actually a certain number of studies. You're citing, amongst others, at the next page, page 41, at j., a study made by Eliyahu published in two thousand six (2006).

A. Yes.

Q. [362] I am showing you a more recent publication, it's a two thousand eleven (2011) publication. What you have in the pages I gave you is the abstract for more than one review, and I want to draw your attention at the one at the top, because we see that there has been one in two thousand six (2006), two thousand nine (2009) and two thousand eleven (2011). So, you mention in your report the one that has done, published, in two thousand six (2006). I would like to know why you have not mentioned the one that has been published in two thousand one (2001) who are the same authors mentioned,

Contrary to our previous studies in this work, external antennas located far away from the subject were connected to the cellular phone. This setup prevents any emission of RF from the internal antenna, thus drastically

reducing RFR exposure. Despite that,
the results remain similar to those
obtained in our previous work. These
results indicate that some of the
effects previously attributed to RFR
can be the result of some confounders.

Confounders are other elements that actually can
be... can have led to the previous results, am I
right?

A. Absolutely, yes.

EXHIBIT B-0145: Report entitled - Cognitive
effects on cellular phones : a
possible role of non-
radiofrequency radiation factors.

Q. [363] So, we see that the author in this one is
putting a question mark let's say to the results
that have been published previously. Were you aware
of this...

A. I was not aware of this particular study. And
again, I would say that in my report, because I was
not focusing particularly on electro
hypersensitivity or cognitive effects, and in
general have found the reports for cognitive

effects of EMF to be weak and not very conclusive, so I certainly have not referenced every article there and I have not emphasized that as a major disease of concern. I mean it is of concern if such effects exist, but I remain somewhat skeptical that they do, unlike the situation with results on cancer and some of the other diseases.

Q. [364] In Eliyahu, are you suggesting that the study was focusing on electro sensitivity?

A. Well, cognitive deficits are a part of the electrical hypersensitivity syndrome, mental dullness and so forth. So, this is all related to electrical hypersensitivity. They were looking specifically at cognitive effects. So, yes, it's part of, but it's only a component.

Q. [365] It's a component. And when you're talking at 40 of various things that, for you, have been shown, neurologic, immune, endocrine, reproductive and cardiac, adverse health effects from low-dose, are they all components of the electro sensibility syndrome, is it what you're saying? Or you're limiting it to what has been studied by Eliyahu?

14 h 46

A. No, I really think that with the exception of the first listing there, Volkow, everything else listed

here are reports primarily of cognitive effects or changes in brain transmitters and so forth. I think in general these results are relatively weak and I listed them because I was asked to give a review of the state of the art, these are published reports that report that there are effects, but personally, I don't find them overly convincing.

Q. [366] Okay.

A. I think I should comment a little bit about the first one, the Volkow paper, because that is an extraordinarily important study. I believe I mentioned it briefly yesterday.

Q. [367] You already mentioned it. I want to go at Barth that you have mentioned.

A. Barth. Okay.

Q. [368] Okay. First of all is there any mention that actually these studies that you have cited in support of your affirmation at paragraph 40 are being considered by yourself as being weak? Because it's not the way I'm reading the report.

A. Perhaps not. But I do consider them weak. There are some actually, to correct my previous statement, there are some at the end that deal with sperm motility and reproductive function. That's obviously not part of the electro hypersensitivity.

Q. [369] Now I ll show you an abstract from Barth and others... Est-ce qu il nous manque, excusez-moi, on l a produit le précédent.

LA GREFFIÈRE :

Oui.

Me MARIE-JOSÉE HOGUE :

Vous le faites automatiquement. O.K. Parfait. Ça permet d aller plus vite.

EXHIBIT B-0146: Report entitled - A meta-analysis for neurobehavioural effects due to electromagnetic field exposure emitted by GSM mobile phones.

Q. [370] I m showing you actually an abstract. The first one is, has been published in two thousand and eight (2008) and you have referred to this abstract, to this article, at point k., 40 k., as supporting your affirmation at paragraph 40. But we have found that actually Mr. Barth and others have also published in two thousand and eleven (2011) and in two thousand and twelve (2012) and I m reading, I m going at two thousand and eleven (2011), the abstract, the second page, it s a meta-analysis, so,

We carried out the current meta-analysis in order to investigate the impact of electromagnetic fields emitted by mobile phones on human cognition.

This is one of the things that you mentioned in paragraph, you have not mentioned cognition per say, but you have used this study in support of your affirmation at paragraph 40. If we look at two thousand and one (2001) (sic), the results that have been attained by this group of researches is,

No significant effects of electromagnetic fields emitted by Global System for Mobile Communications (GSM) and Universal Mobile Telecommunications System (UMTS) mobile phones were found. Cognitive abilities seem to be neither impaired nor facilitated. Results of the meta-analysis suggest that a substantial short-term impact of high frequency electromagnetic fields emitted by mobile phones on cognitive performance can essentially be ruled out.

Is there a reason why this more recent study is not mentioned in your report Mr. Carpenter?

A. I was not aware of this study.

Q. [371] And they have reviewed seventeen (17) studies so you were not aware neither of these seventeen (17) studies that have been reviewed through this meta-analysis?

A. Well, I m not sure which seventeen (17) they are since I don t have the bibliography, but I am pretty certain that I would be aware of the majority of them.

Q. [372] Okay. Because there is none that are mentioned in your report that lead to...

A. But then again...

Q. [373] ... negative conclusion.

A. Yes. Again this was not really a major focus of my report other than to document that there have been reports of effects on learning and memory.

Q. [374] If we go at the one that has been published in two thousand and twelve (2012), it s the last page of the, no, not the last page, the third page,

The potential...

I am reading from the abstract,

The potential effects of

radiofrequency electromagnetic fields

emitted by GSM mobile phones on subjective symptoms, well-being and physiological parameters have been investigated in many studies. However, the results have been ambiguous. The current meta-analysis aims to clarify whether RF-EMF have an influence on well-being in self-reported...

Non, non. I am in two thousand and twelve (2012), I m sorry. - Oui, c est correct, c est correct. -- In two thousand and twelve (2012). And then the conclusion in two thousand and twelve (2012) is,

The results show no significant impact on short-term RF-EMF exposure on any parameter.

Were you aware of this?

A. You know, this is a very suspicious group. If you look, they have three publications all on seventeen (17) subjects, so what they re doing is publishing the same thing over and over in different journals. The two thousand and eight (2008) report is on nineteen (19) studies, the two thousand nine (2009), ten (2010) was it, eleven (2011), twelve (2012) and I guess two in ten (2010), they re all on the same, the same database.

Q. [375] Okay. But I imagine before quoting yourself articles you mentioned previously that you looked at who wrote the articles and you made an assessment of the seriousness of these people and I see that you have quoted the very same group at k., at 40 k. in your report. It s exactly the same people that you have quoted.

14 h 54

The only thing is when you have quoted the articles, they were... you viewed the article published in two thousand eight (2008) as supporting the proposition made in paragraph 40. So then, you changed your mind and you think that these people are no longer serious and reasonable people?

A. Well, I was unaware of the articles, other than the two thousand and eight (2008) article.

Q. [376] I am now showing you a report that has been issued in April two thousand eleven (2011) by the California Council and Science and Technology entitled, Health impacts of radiofrequency exposure from smart meters. So, it's dealing directly with smart meters. Were you aware of this report, Sir?

A. Yes, I am.

EXHIBIT B-147: Report entitled - Health Impacts
on Radio Frequency Exposure from
Smart Meters.

Q. [377] And you were aware even before drafting your
report?

A. Yes.

Q. [378] And is there any mention of this report in
your... of this report in your own report?

A. No, there's not.

Q. [379] Is there a specific reason why there's no
mention?

A. Well, this is not a research article, this is not
an article that deals with the state of the
science. It is a review on health impacts. There
has been an extensive rebuttal to this report,
which I also do not reference. Perhaps this one
should have been referenced because it is
specifically on smart meters. I'm very aware of it,
I know this report fairly well. But much of the
issues in this report and in the rebuttal by Cindy
Sage deal with technical aspects that I feel I'm
not particularly expert in.

Q. [380] If I look at the key report findings however,
first key finding, wireless smart meters,

When installed and properly maintained
result in much smaller levels of radio
frequency (RF) exposure than many
existing common household electronic
devices, particularly cell phones and
microwave ovens.

That, I imagine you do agree with?

A. I certainly agree with that, yes.

Q. [381] The current FCC standard provides an
adequate factor of safety against
known thermally induced health impacts
of existing common household
electronic devices and smart meters.

You have already made a reference to the fact that
there's a safety factor that has been built into
the standards that have been put in place by the
FCC?

A. Yes, so I agree with that statement for thermally
induced effects.

Q. [382] To date, scientific studies have not
identified or confirmed negative
health effects from potential non-
thermal impacts of RF emissions such

as those produced by existing common household electronic devices and smart meters.

So, my understanding, and if you look into the report, you will see that they have made a review of the scientific studies that have been published on the topic. Don't you think that since your mandate was to provide the Board with the state of the scientific literature, it could have been relevant to look at these studies that have been reviewed by this group of researchers and to mention it in your report?

A. Well, I think that looking at other people's reviews is not how I saw my charge. I don't agree with this statement. I understand that there is some controversy, there's some inconsistencies, but I don't agree with that statement that scientific studies have not identified adverse health effects. I've shown you multiple studies that have identified adverse health effects.

Now, there are two issues that this report and many others raise. We don't demonstrate consistent cancer in animals, and we don't know the precise mechanism. And I think neither of those is an adequate reason for discarding the cell phone

cancer studies we've talked about, the RF generating transmission tower studies that we've talked about. And so, a review that draws that conclusion, in my judgement, is not worth recording.

Q. [383] So, it was not worth being mentioned in the report?

A. No.

Q. [384] That's the choice you made?

A. Yes.

Q. [385] Okay. And if we go at the fourth finding:

Not enough is currently known about potential non-thermal impacts of radio frequency emissions to identify or recommend additional standards for such impacts.

You have already commented on it.

A. I agree with that.

Q. [386] You agree.

A. But I think that just those statements are in themselves an argument for the Precautionary Principle.

Q. [387] I want to go at the HPA report that you have referred to briefly yesterday. And I want to look at this report in conjunction with what you said at

paragraph 41 of your report,

Many cellular and animal studies, of
which the following are but a few,
support conclusions of cancer,
genotoxicity, neurotoxicity and other
health outcomes from RF and W
radiation.

First of all, do you agree with me that the animal
studies are very important to answer
carcinogenicity?

15 h 00

- A. I agree that they re important but, you know, one
of the points that I ve made consistently is that,
that humans and animals, all humans and all animals
exposed to EMFs of whatever frequency, that the
animal results are unlikely to show cancer. For
example, one of the... one of the... my big
objection is that the National Toxicology Program
in the U.S. is just mounting another large exposure
of rats and mice to radio frequency fields. I will
predict they will find nothing.

I think in terms of mechanism, the cellular
study showing genetic changes that result are
important, because genetic changes are associated
with elevated cancer. But from my perspective,

which is the public health perspective, I care much more about the human studies that I care about the animal studies.

Me MARIE-JOSÉE HOGUE :

O.K. Je vais aller dans le rapport HPA, je ne sais pas si vous en avez. Il y a une copie qui a été déposée déjà, je ne sais pas si vous avez une copie papier, sans ça je peux vous en prêter une.

LE PRÉSIDENT :

C est ce qui a été produit ce matin, là?

Me MARIE-JOSÉE HOGUE :

Ça a été produit par maître Neuman.

Me DOMINIQUE NEUMAN :

Je suis en train de chercher la cote.

Me MARIE-JOSÉE HOGUE :

Vous l avez?

LE PRÉSIDENT :

C est-tu le 99, 0099?

Me DOMINIQUE NEUMAN:

Non.

LE PRÉSIDENT :

Non? J y vais par l épaisseur.

Me DOMINIQUE NEUMAN:

C est 93, qui est le rapport AGNIR fait pour la HPA.

LE PRÉSIDENT :

Je l'ai, je l'ai.

Me DOMINIQUE NEUMAN:

Et le document suivant qui est très court, qui est la réponse de HPA à ce rapport qui est...

LE PRÉSIDENT :

0093, 0094.

Me DOMINIQUE NEUMAN:

Oui, c'est ça. 0093, 004. Donc 0093 c'était quatre-vingt-dix (90) pages à peu près là, qui était des extraits...

Me MARIE-JOSÉE HOGUE :

Je pense que c'est ce que vous avez, mais probablement pas complet.

Me DOMINIQUE NEUMAN:

Ce n'est pas complet mais tout est, toutes les dates sont là.

Me MARIE-JOSÉE HOGUE :

Bon bien regardez, je vais vous remettre le rapport complet.

Q. [388] And I want to go at page 163. 163. And we are in chapter 4.

Me DOMINIQUE NEUMAN:

Does Dr. Carpenter have the document yet? 0093?

A. I have it. I don't have page 163.

Me MARIE-JOSÉE HOGUE :

Q. [389] I'm in page 163, it's in chapter 4 entitled "Animal Studies". And I want to go at 4.5.2.1 "Long term rodent bioassay." We'll give you a copy, a hard copy.

A. Thank you.

Q. [390] Just go at page 163. At the top of the big section starting by "Long term rodent bioassay"...

A. Yes.

Q. [391] The first sentence is,

Classical long term bioassay are
considered a cornerstone in assessing
the potential of agents to induce
malignancies.

We agree that we are talking about cancer?

A. Yes.

Q. [392] Okay. Do you agree with this affirmation that it's a cornerstone in assessing the potential of agents to induce malignancies?

A. It's a cornerstone for studies on chemical exposure. As I have stated earlier and described yesterday, the reports from Kuoni and Philips back in the late eighties (1980s) demonstrated that induced currents in rats were much smaller than they are in pigs, are much smaller than they are in

humans for the same applied fields. And that's the microwave fields. So I think there's reasons to question whether rodent, long term rodent bioassays for electromagnetic fields, again whether powerline fields or RF, are, could, should be expected to have the same impact and the same basis for carcinogenic assays as chemicals do.

Q. [393] Okay. Turn to page 164. There's many studies, and when I'm saying many studies, you can turn the pages and you will see that there's various tables exposing the results of probably more than twenty (20) studies, it's twenty-five (25) studies I think...

A. Yes.

Q. [394] ... that have been conducted on animals and we see there's a column entitled "Results of exposure" and we see that almost everywhere that there's no significant effects that have been observed through all these studies. I would like you just to explain to the Board again the reason why these studies are not mentioned in your own report when you made the affirmation that at 41, that many cellular and animal studies of which the following are but a few support conclusion of cancer genotoxicity and other health outcomes from

RF-NW radiation.

- A. Well you should note in the first place that there is nothing listed there that has cancer as an outcome. I believe that s true. And that is for the reason that I do not believe that long term rodent bioassays are the cornerstone of studying cancer effects in humans.

15 h 07

I believe that there are sufficient differences in responses to EMFs in small rodents, even in bigger pigs, from humans on the basis of the work that was done by the Battelle National Laboratories back in the eighties (80's), that would allow one to question whether long-term rodent bioassays have any value whatsoever. This is why I think it's foolish for the National Toxicology Program in the U.S. to do yet another one. They have been consistently negative. And I agree with that.

In our New York State power lines project it was ELF, not RF, but we supported two long-term rodent bioassays. They were negative. So, I think that clearly, rodent exposure to radio frequency radiation does not induce cancer. That doesn't mean that radio frequency radiation exposure to humans

does not produce cancer because all of the evidence suggests that it does.

Q. [395] Tell me, Sir, in your report, however, you mention that there's many studies that support conclusion of cancer?

A. I've listed studies that demonstrate genetic changes in cellular studies, but there are effectively no studies, maybe one with RF that was not confirmed in a subsequent study, but in intact animals, there are no studies that have shown cancer as an outcome.

Q. [396] Okay. So, again, is it a typo when you say that, "Many cellular and animal studies of which the following are but a few, support conclusion of cancer"? Should we remove the word cancer?

A. Well, we should remove the word animal. There are many cellular studies that show mechanisms that are known to be involved in the induction of cancer. Again, that was a generic statement there to cover an area, but I certainly agree that there are no animal studies that have demonstrated cancer as an outcome. And I've publicly commented on that, it's in my review articles. And I apologize if that implies that I thought whole animal exposures resulted in cancer.

Q. [397] Okay. But in the studies that you mention, is there any one that are studies on cellules , or cells? Because all the studies seem to be animal studies, and you have cited them in support of your affirmation. Now, you're saying we should retract animal , but then, none of the studies that you have mentioned are relevant.

A. Well, there are studies on honey bees or animals, but cancer is not the in-point.

Q. [398] Yes, bu do you see any studies on cells?

A. Well, there are studies under the previous heading of...

Q. [399] I'm talking in this heading, Sir.

A. In this, no. In this section, there is no studies of cancer outcomes in cells.

Q. [400] Okay, but...

A. But they are given elsewhere in the document.

Q. [401] Okey, but I'm not talking about cancer. You're telling us, "Just remove the word animal, keep the same sentence",

Many cellular studies of which the following are but a few, support conclusions of cancer genotoxicity, neurotoxicity and other health outcomes from RF and W radiation.

I'm asking you to then identify which one in the following studies that you quoted and support of this affirmation, if we agree to remove the term animal , which one are cellular studies?

A. I say there are many studies of which these are, but a few. I do not, of the two, four , six, seven studies listed there, list studies that show DNA damage or heat-shock protein induction. Those are the studies that provide a mechanism for by RF exposure can cause cancer.

Q. [402] Okay, I'm probably not clear enough. What I want to know is amongst A, B, C, D, E, F and G, which one is a study on cells?

A. The studies are the ones that are the many studies of which these are but a few. Those studies are not listed here, but I say there are many studies.

Q. [403] Okay, is there any study listed in these ones that is a study conducted on cells?

A. There are many studies on cells. There's no study with cancer as an outcome.

Q. [404] Okay. Which one, amongst A, B, C, D, E, F and G is a study on cells? I'm suggesting they are all studies on animals. We'll take them one by one. The first one is a study that have been made on male rats to...

A. I think we can just agree that of these seven that are listed, all are studies on animals.

Q. [405] Okay.

A. And none have cancer as an outcome.

15 h 13

Q. [406] Okay. Is there any one dealing with neurotoxicity? Genotoxicity?

A. Well, the first one deals with thyroid hormone and behaviour. The second one deals with cognitive rats intelligence. The third one deals with honey bee behaviour. The fourth one deals with reproductive capacity... I'm not sure, it doesn't say what, I have that in my list here. The next one deals with breeding sparrows. The one after that deals with testicular damage in rodents. And the final one deals with wildlife in the wild living near microwave transmitters. But these are just a few of studies and I certainly acknowledge that and did not at all mean that these were... this section was a comprehensive review of the literature.

Q. [407] If we go back to the HPA report, page 166, I'm going at the conclusion of the animal studies reviewed by this group. It's at the top of page 166,

Taken together, these rodents studies

provide strong evidence that exposure to RF fields at up to guideline values for up to two years has no adverse effects on health, nor does such exposure increase the risk of cancer.

I'm...

A. I agree with that.

Q. [408] You agree with that? Okay.

A. And I've published that in my reviews, that there is no evidence in long-term rodent bioassays for cancer as an outcome.

Q. [409] We'll go now at page 157, because you also mention at paragraph 41 the genotoxicity. At page 157, we see, at paragraph 4.5.1, they are dealing specifically with genotoxicity. And they have studied eighteen (18) studies. And the table, if you turn the pages you have the table of the studies that have been reviewed. And again, the conclusion is at page 162. If you look at all the charts, you have again the result of exposure, no significant increase, no significant increase. Everyone can read each and every result. But look at the conclusion at page 162,

Together, these studies suggest that neither acute nor long-term exposure

to RF fields, including the fields used by mobile phones, induce genotoxicity in rodents. However, other studies have reported clastogenic effects, but none of these studies is particularly robust.

And I want you, Sir, to look at the exposure condition of all these studies. Take the example of Ziemann, appearing at page 159. The exposure was at nine hundred two (902) megahertz for two hours per day, for five days a week, for two years. Could you just compare the nine hundred two (902) megahertz, and you have also at zero point four (0.4), one point three (1.3) or four (4) watts by kilogram.

A. I'm sorry, I'm not quite sure what you're asking me to do, compare...

Q. [410] To compare the exposure condition, for example in this study, Ziemann, with the standard that have been put in place by Santé Canada. How do you compare the zero point four (0.4), the one point three (1.3) and the four (4) watts by kilogram with the standard that have been put in place by Santé Canada, which is zero point zero eight (0.08)?

A. Well, obviously, these are higher exposure doses.

Q. [411] Okay. And the result is no significant increase?

A. Yes.

Q. [412] And it's the same thing if you continue with the studies, in all these cases the exposition was much higher than the standard that have been adopted by Health Canada?

A. Yes, that's correct.

Q. [413] And FCC? You agree with me?

A. Yes.

Q. [414] None of these studies were mentioned in your report?

A. Well, there are a number of... if you go ahead in my report to section 44, there's a whole section on DNA disruption, micronuclei formation, changes in RNA. And I reference several reports relevant to that. There's one specific, one called "Genotoxicity of Radio frequency Radiation". It's a nineteen ninety-nine (1999) paper with Brusick as the chief lead author.

15 h 20

And again, this is a review of one hundred (100) studies and it does not conclude that there are strong evidence for genotoxic effects. But it says that there are some indirect effects on

replication and transcription of genes under relatively restricted exposure conditions. The Belyaev report, two thousand nine (2009) report, again is referenced there. You know, I've said earlier, I said yesterday, that the studies on effects of genes are more negative than positive.

Q. [415] Okay. But what I want to know, when we look at all these studies that have been reviewed by the HPA agency, do we see in your report, anywhere in your report, the information that actually these studies have led to negative results?

A. Well, the studies have not all led to negative results. Many have been negative, many have been positive. And I've included the big report that we went through yesterday that outlines, whether or not, there were positive effects.

Q. [416] But I want to know where in your report I can see that there's many studies -- I don't want to argue with you whether it's... what is the number on one side, on the other side -- where can I see in your report that there's many studies that have led to negative results? Is there anywhere in the report that I can see that?

Me DOMINIQUE NEUMAN:

Mr. Commissioner, my client has already filed

ninety (90) pages of that report, all the tables which show positive results, all the tables which show negative... all the studies mentioning negative reports. Dr. Carpenter has filed ninety (90) pages of all, including all the tables, showing all the studies mentioned in this report. They are filed, they have been filed by him.

LE PRÉSIDENT :

Excusez-moi, j'étais en train de prendre une note, j'ai manqué peut-être un petit bout de la question.

Me MARIE-JOSÉE HOGUE:

La question c'était: Where in his own report can I find any indication that many studies have led to negative conclusions?

Me DOMINIQUE NEUMAN:

I repeat...

LE PRÉSIDENT :

Il me semble que c'est une question...

Me DOMINIQUE NEUMAN:

... Dr. Carpenter has expressed that they were scientific...

LE PRÉSIDENT :

Ne répondez pas pour le Dr Carpenter. Il me semble que c'est une question facile à répondre.

Me MARIE-JOSÉE HOGUE:

Q. [417] Where can I find it in your report that actually many studies have led to negative results?

A. Well, I don't think I state it in exactly those words. I've certainly implied throughout the report that there's inconsistency, that some studies are positive, some are negative. I've said that again and again. I don't think I said specifically that many studies reported negative results.

Q. [418] Put aside the results, is there any of these studies that have been mentioned in your report...

A. Any of what studies?

Q. [419] Of the studies that are appearing at page...

A. I have no idea. I can go through that. I mean I've given you lists of probably two thousand (2,000) studies.

Q. [420] But I'm talking in your report, Sir. Have you referred to any... you have cited many studies in your own report, I'm not asking if they are referred to in another article that you have filed, I'm just asking in your own report, is there any of these studies that have been referred to?

A. I have no idea, I have not gone through that to see, but I suspect there are studies that I've... this document is pretty comprehensive, it lists

just about everything that's been done. Obviously, I did not do that in my report, I didn't feel that that was my charge.

Me DOMINIQUE NEUMAN:

The attachments are part of Dr. Carpenter's report. All the documents that were filed. We specifically filed hundreds of pages of all the documents, or at least almost all the documents referred to in Dr. Carpenter's report. They have been filed.

Me MARIE-JOSÉE HOGUE :

Je pense que c'est tout à fait légitime quand quelqu'un dépose un rapport écrit et livre un témoignage devant un Tribunal et dépose en vrac un certain nombre d'articles et que tout ce qui est dit dans son témoignage et dans son rapport, puis là, je ne veux pas argumenter, là, O.K., mais vous voyez où je vais. Je suggère que le rapport et le témoignage ne font pas mention des études qui conduisent à des résultats négatifs. Et je pense que c'est une question en contre-interrogatoire qui est tout à fait légitime.

Me DOMINIQUE NEUMAN:

My consoeur is... it's false what she's saying because Dr. Carpenter has stated that the scientific community is not unanimous. And there

are several pages on the specific subject of the lack of unanimity in the scientific community in which this matter is discussed, the fact that all the research is not consistent, to use the term previously used, and that some... Dr. Carpenter, if I remember well, even states that some results could not be duplicated. He discusses the situation that some results are positive, some results are negative. And tries to explain or to discuss the situation by which all the results are not going in the same way all the time.

LE PRÉSIDENT :

Je comprends que la question est de savoir, pourquoi est-ce que dans votre rapport vous avez cité des études qui donnaient des résultats négatifs et où sont ces citations-là dans le rapport.

Me MARIE-JOSÉE HOGUE :

C'est ça.

15 h 25

LE PRÉSIDENT :

Puis l'autre question, c'est : Pourquoi est-ce que vous n'avez pas mis dans votre rapport les études qui donnaient des résultats négatifs? C'est ça?

Me MARIE-JOSÉE HOGUE :

Oui.

LE PRÉSIDENT :

Bon. Puis la réponse, ce que je comprends, c'est :
J'ai produit beaucoup d'études et dans ces études-
là, bien, il y en a qui sont positives puis il y en
a d'autres qui sont négatives, mais on ne les
identifie pas.

Me MARIE-JOSÉE HOGUE :

C'est ça.

LE PRÉSIDENT :

Ce serait plus simple, t'sais, je veux dire, si...
je comprends qu'il y a bien des... je suis rendu au
troisième cahier de vos papiers. Alors, ce serait
plus simple si, dans tous ces rapports-là, si on
pouvait dire, oui, la vraie réponse, ce serait :
j'ai produit disons soixante-quinze (75) études, et
les études qui donnent des résultats négatifs sont
numéro un tel, numéro un tel, numéro un tel. C'est
ça qu'on cherche à clarifier. Je suis encore, comme
j'ai dit, il y a des fois, c'est noir, des fois,
c'est blanc. Là, je suis encore dans le gris à ce
sujet-là. Alors d'où la question.

Me DOMINIQUE NEUMAN :

Si je peux me permettre, le docteur Carpenter a

fait mieux que ça puisqu'il a produit justement les extraits du rapport AGNIR qui est discuté en ce moment avec toutes les tables. Et à la fin de chaque ligne, il y a le « yes » ou « no ». C'est simpliste comme description, mais ça indique qu'il y a des résultats positifs ou négatifs. Il a produit ça. Vous avez... Vous pouvez voir chacune des études, oui, « yes » ou « no ».

LE PRÉSIDENT :

Vous dites qu'il y a au dossier déjà une indication, les études c'est-à-dire qui sont positives et négatives sont déjà identifiées. À quel document?

Me DOMINIQUE NEUMAN :

C'est le rapport que vous avez entre les mains, mais dont les extraits, toutes les tables, toutes les tables sont à la pièce, je pense que c'est 93 qu'on a mentionné tout à l'heure, 0093, toutes les tables. Et le docteur Carpenter l'avait commenté hier. On voyait une ligne, une étude sur tel auteur, tel sujet. Réponse, c'est « yes ». Ligne suivante « no ». Ligne suivante « yes ». Donc, on a toutes les études. Là, il n'y en a pas juste une centaine, il y en a deux mille à peu près, comme le docteur Carpenter l'a mentionné. Donc, n'importe

qui qui veut avoir le portrait complet de la situation, voir où sont... quelles études sont positives, quelles études sont négatives, puis des études récentes, là, vous l'avez. Vous avez tous les positifs, tous les négatifs. On pourrait passer deux heures sur chacune des deux mille études, ça ferait beaucoup de temps, mais tout est là.

Me MARIE-JOSÉE HOGUE :

Monsieur le Régisseur, mon point, puis je ne veux pas en débattre longtemps, c'est très facile de déposer des dizaines d'articles et ensuite de faire des affirmations dans un rapport, par écrit, et en témoignage. Alors, ma question, elle est très spécifique. Je veux simplement savoir si je trouve dans son rapport quelque part l'information à l'effet que plusieurs études, je ne veux même pas débattre avec lui de combien, simplement s'il a pris la peine, compte tenu du mandat qui lui avait été confié, de souligner dans son rapport que plusieurs études, et les citer s'il y en a, qu'il me dise c'est où, avaient conduit à des résultats négatifs. C'est simplement ça ma question.

LE PRÉSIDENT :

C'est tout à fait légitime comme question. Posez-la! Si c'est déjà... Je permets la question. Allez-

y!

15 h 29

Me MARIE-JOSÉE HOGUE:

Q. [421] So I would like to know where can I find in your report, if there is a place where I can find it, where you are making the point that many studies actually have conducted to negative results?

A. Well that, I don t know that that statement is made directly, but that is implied at almost every place in my report.

Q. [422] Okay. Have you cited in your report any of these studies that led to negative results?

A. Yes, I certainly have.

Q. [423] Where, which one?

A. Well, the one I just pulled out, Brusick.

Q. [424] Tell me which one?

A. Brusick, nineteen ninety-eight (1998),
Genotoxicity of Radio Frequency Radiation .

Q. [425] Sorry, you are on what page, sir?

A. I don t know, I lost it but...

Q. [426] Is it page 20?

A. DNA Repair. It s...

Q. [427] 23?

A. 44.

Me DOMINIQUE NEUMAN:

23.

Me MARIE-JOSÉE HOGUE:

23?

A. 44, g. i.

Q. [428] 44 g. i.?

A. And this goes to the issue of genotoxicity and I should mention that just by chance, yesterday when we were looking at that long report on yes or no we happen to look at the genotoxic studies and I commented specifically on the relative frequency of nos in that report. So that s already on the record.

Q. [429] Okay. I want to go at point g. Is there any mention that this study has lead to negative results. I see that the study is listed but I don t see...

A. Its states...

Q. [430] ... any reference that it s, that the results have been negative.

A. The data from over one hundred (100) studies suggests that radiofrequency radiation is not directly mutagenic and that adverse effects from exposures to organisms at high frequency and higher intensities are predominantly due to hyperthermia.

Q. [431] Where are you at? I m sorry.

A. It s the abstract of the paper by Brusick.

Q. [432] No, no, I m asking, in your report, what I want to know, how can I know when I look at all these studies that you have cited, is there any mention that this study has led to negative results. It s my question, in your report. I m not talking, if we take the time necessary, to read each and every article to see whether they have lead to negative or positive results. I m asking you if there s any indication in your own report?

A. I say repeatedly that results are inconsistent, but that some results show positive effects and some show negative effects. I don t know precisely where I have said that, but I have said that repeatedly in my report.

Q. [433] If we go, if we go at HPA report, page 311. I want to know if you have at any point in your report, because you have mentioned the HPA report yesterday, and I think as well maybe this morning, have you at any point in your report made a reference to the overall conclusion that have been reached by this group?

A. Well, I certainly discussed it yesterday. I don t have that in front of me, I have the HPA response

but you mean the report that they solicited to
which this two page response refers.

Q. [434] Okay. No. What I want to know is, if I can
find anywhere in your report a reference to the
overall conclusion appearing at page 311 of the HPA
report? In your own report?

A. As we have stated on numerous occasions, I have not
referenced in this report reviews by various
organisations.

Q. [435] Okay.

A. I did not feel that that was my mandate. I
certainly did include it as an appendix to my
statement.

Q. [436] You made a parallel yesterday between the
situation with the smoking and lung cancer and the
RF. I want to show you...

A. Thank you.

15 h 35

EXHIBIT B-0148: Report entitled - Smoking and
Cancer Mortality among U.S.
Veterans: A 26-Year Follow-Up.

Q. [437] If you go, sir, at the Table III, okay
because this study I have looked into various

diseases with respect...

A. Yes.

Q. [438] ... to smoking habits and I want you to know at the lung cancer, at Table I. You see that there have been five thousand ninety-seven (5,097) deaths and if you go at Table III...

A. Yes.

Q. [439] ... you have the relative risk and the ninety-five percent (95 %) confidence intervals that we have always referred to...

A. Yes.

Q. [440] ... to determine whether it is statistically significant or not, and I would like you just to mention, for people that have smoked, what were the related risk results.

A. Well these are all statistically significant results and they are presented on the basis of how many cigarettes per day, between one and nine, the odds ratio is three point seven (3.7), statistically significant; between ten (10) and twenty (20) it is nine point nine (9.9); thirty-one (31) to thirty-nine (39) it is sixteen point nine (16.9) and more than forty (40) it is twenty-two point nine (22.9).

Q. [441] Okay. If we compare these results, and I m

going to show you just a chart and I want to point out that it s a chart that we have prepared so it s not something that has been published, it s just for the ease of the exercise.

A. Thank you.

EXHIBIT B-0149: Chart entitled - Cancer :
tabagisme vs téléphones
cellulaires.

Q. [442] What we have put on this chart are the results...

Me DOMINIQUE NEUMAN:

Since Dr. Carpenter does not understand French maybe it would be useful to translate...

Me MARIE-JOSÉE HOGUE:

You re right.

Me DOMINIQUE NEUMAN:

... especially the word in green that appears...

Me MARIE-JOSÉE HOGUE:

I will. I will make the translation.

A. I think I actually can understand this amount of French.

Q. [443] But I m, just to make sure, the lung cancer and smoking at the top, beside Mc Laughlin and al.

Five... the numbers are the same. And Interphone Study, cancer of the brain, brain cancer and telephone, cell phones actually, and then we have at the bottom on the left never and then, the number of years, and you have in red, the number of cigarettes per day.

And I just want you to indicate in terms of if you look at the comparison between, because that s a parallel you made yesterday between the results attained with smoke and the results attained with cell phones. We see that with cell phones and it is based on the Interphone Study, we see that it s zero point six two (0.62), zero point eight four (0.84), zero point eight one (0.81) and zero point nine eight (0.98).

A. Now are those years of smoking? Or is that age?

Q. [444] Where are you at?

A. The one point one nine (1.19), two to four, five to nine, plus ten (10).

Q. [445] No, that is the use of the cells.

A. The frequency of use.

Q. [446] Yes.

A. Well, I...

Q. [447] It s the odd, the odds ratios that are appearing on both lines, the zero point six two

(0.62), the zero point eight four (0.84), the zero point eight one (0.81), I think, and zero point nine eight (0.98), are the odds ratios. And same thing for the upper line, the red upper line.

A. Well then for ten (10) plus years, that is not a correct number, zero point nine eight (0.98).

Q. [448] If you...

A. As we have described earlier, the odds ratios were two point something from the Appendix.

Q. [449] No, no, I m not in the Appendix. I m in the main study.

A. Alright. But the, you know, the important results are in the Appendix. Now, let me back track and talk about my reference yesterday to smoking. I certainly do not think that exposure to radio frequency radiation is as serious as exposure to tobacco smoke. The reason I raise the issue was to document that even something so strikingly harmful to humans, first well-documented in the mid-nineteen thirties (1930s), at least in the U.S., until the Surgeons General s report in what, the late sixties (1960s), there was no recognition by the medical establishment, by the cancer authorities, that this was a risk. By the time it was recognized, you had this striking relationship

and people were dying all over the place. Not just from cancer, but from heart diseases and diabetes and other related diseases.

Now I did not mean to imply, fortunately, the two cancers and my major concern, and the main evidence, is for cancer, for radio frequency radiation. The two cancers of major concern are leukemia and brain tumors. These two cancers are fortunately much less common than lung cancer and, while I certainly do not expect that we ll ever see odds ratios of twenty-two (22), or whatever this is, twenty-two point nine (22.9).

15 h 41

For these relatively rare cancers, I said yesterday, and I affirm today, that our failure to take precaution right now is very likely, given the evidence we have for elevation in cancer risk in relation to exposure, to lead to an increase in the numbers of leukemias and brain cancers, possibly other cancers, but the evidence for the other cancers is not strong.

Q. [450] Okay. So, I'm getting from your answer that actually if we got the... if I got the impression, I'm going talk for myself, that you were tracing a parallel between smoking and the FR, that is wrong,

you're not suggesting in any ways that such a parallel should be traced?

A. Not in terms of the actual risk, no. In terms of paying no attention to early evidence, yes, that is the parallel.

Q. [451] Okay. I want to go back to the President's Cancer Panel that you have filed. It's document 0072, PA-0072. Because you have mentioned a certain number of things about the President's Cancer Panel. Did you get the document?

A. Yes.

Q. [452] Yes? You have it also, Monsieur le Régisseur? Non? 72. And actually, it's a group that you have been invited to speak to, you mentioned?

A. That's correct. I want to go at page... It's at the left bottom of the pages, so it's ID-4.. And I want to go at the top of the right column. And I'm citing from,

Sharp controversy exists in the scientific community as to possible adverse health effects from exposure to low frequency electromagnetic energy. The use of cell phones and other wireless technology is of great concern, particularly since these

devices are being used regularly by ever larger and younger segments of the population. At this time, there is no evidence to support a link between cell phone use and cancer.

Do you have any reason to believe that such is not still the official position that has been taken by the President's Cancer Panel?

A. Well, I think if you read the sentences following that, you see that that's a qualified conclusion. I certainly presented some of the same evidence, it's a couple of years ago now, that I presented here. And the two members of the President's Cancer Panel were obviously not sufficiently convinced to make a stronger statement than that, but they go on to say,

At this time...

Sorry.

However, the research on cancer and other disease risk among long-term and heavy users of contemporary wireless devices is extremely limited.

Similarly, current and potential harms from extremely low frequency radiation are unclear and require further study.

So, I think they are endorsing precaution right there.

Q. [453] It's not my question. My question is, when we look at their position with respect to whether there's any evidence to support a link between cell phone user and cancer, do you have any reason to believe that the official position of the President's Cancer Panel is no longer the one that is expressed there?

A. No.

Q. [454] That there is no evidence to support? Not little or... There's no evidence, that's the official position that have been taken. Do you know if this position have been modified?

Me DOMINIQUE NEUMAN:

Objection. Mr. Carpenter has just read the next sentence in that same paragraph. The position does not stop at the middle of the paragraph.

Me MARIE-JOSÉE HOGUE:

I'm not suggesting...

Me DOMINIQUE NEUMAN:

The position is the complete paragraph.

LE PRÉSIDENT :

C'était quoi la question, là?

R-3770-2011
18 mai 2012

DAVID O. CARPENTER
Cross-examination
- 208 - Me Marie-Josée Hogue

Me MARIE-JOSÉE HOGUE:

I just asked...

Me DOMINIQUE NEUMAN:

My consoeur asked by limiting herself only to the marked passage, not finishing the paragraph but just stopping at the first sentence. If that, she assumes that this is the position, if that position has changed, but the position is already more nuanced as expressed in the rest of the paragraph. My consoeur is asking if the position, if we limit ourselves to the first sentence and not look at the rest, if that's the position. Dr. Carpenter has already read...

15 h 47

LE PRÉSIDENT :

Monsieur Carpenter vient de dire qu'il a lu tout le paragraphe...

Me MARIE-JOSÉE HOGUE :

Oui.

LE PRÉSIDENT :

... ça continue en disant que...

Me MARIE-JOSÉE HOGUE :

Bien oui.

LE PRÉSIDENT :

... further studies must be made, et caetera. Alors

c est pas ça, c est pas ça qui est la question. La question c est de savoir, est-ce que selon lui cette position du Cancer Panel a changé ou c est ça.

Me MARIE-JOSÉE HOGUE:

Q. [455] That s the only thing I m asking. If it has been modified.

LE PRÉSIDENT :

Ou si ça peut vous rassurer, on va relire le paragraphe au complet.

Me DOMINIQUE NEUMAN:

The problem with my consoeur, describe the position, has been the first sentence only, not the rest of the paragraph. If my consoeur says it s the position expressed in the whole paragraph as stated, I don t have any objection...

LE PRÉSIDENT :

Alors...

Me DOMINIQUE NEUMAN:

... to ask for that.

LE PRÉSIDENT :

... si vous pouvez reformuler pour qu on en finisse avec ça, là.

Me MARIE-JOSÉE HOGUE:

Q. [456] Okay. I m not going to qualify whether it s a

position or not a position. I m going to ask if you know if they have expressed, otherwise than what they have expressed in this document, with respect to the existence or the non-existence of evidence to support a link between cell phone use and cancer?

A. I would suggest you look on page 30 of this document under "Radiation". Number 3 says

Adults and children can reduce their exposure to electromagnetic energy by wearing a headset when using a cell phone. Texting instead of calling and keeping calls brief.

Now I... I don t think there s any change in position but that one paragraph from the abstract does not adequately address the overall discussion in this document.

Q. [457] Okay. It s...

A. Which is to acknowledge that there s some evidence for harm but that it s not conclusive. And this statement is the most direct call for prudent avoidance and application of the precautionary principle.

Q. [458] That is not my question.

A. That is my answer.

Q. [459] But I am going to repeat my question. I want to know if you are aware if the President's Panel has come to another conclusion with respect to the existence of evidence. I am limiting the question to the existence of evidence. Okay. The document is there, it speaks for itself, I don't want to go into a debate. I just want to know if you are aware of any other expression by the Panel with respect to the existence or non-existence of evidence than the one appearing at page iv.

A. Obviously there was other evidence or they would not make a recommendation that children should not talk on cell phones.

Q. [460] Okay.

A. Now they may find that that evidence is not sufficiently convincing to make a widespread statement that cell phones cause brain cancer but they certainly think it's sufficient to advise application of precaution.

Q. [461] Okay. So you are referring to the recommendations that are made in the report?

A. This is under "Radiation" on, this is the President's Cancer Report, page 30, and it's the first recommendation under "Radiation".

Q. [462] Exactly. It's in the recommendations. I want

to know, and I won't continue on it because clearly I think we have understood what is the position of the Panel.

Me DOMINIQUE NEUMAN:

The recommendation is, I think, page 30 has not been reproduced, but the recommendation itself is in the list of recommendations at the end. There's recommendation 1 on the precautionary principle in general and as we go further, there's recommendation on children, I think it's at the last page.

Me MARIE-JOSÉE HOGUE:

Q. [463] Do you know Mr. Carpenter what is the ambient level of RF if you just walk on the street? Do you have any idea what is the level of RF?

A. I couldn't tell you...

Q. [464] You cannot?

A. ... without looking it up. No. I mean, there are, we've provided a document that gives ambient backgrounds and backgrounds in different circumstances but, again, that's really outside of my area of expertise.

Q. [465] Okay. I want to go, I want to discuss the BioInitiative Report. You mentioned yesterday that actually it attracted a lot of attention and

criticism. I would like to go through some of the articles that have been published on it. And I'm giving you, the first one I'm giving you is the one that has been published by...

15 h 53

A. You gave me multiple copies.

Q. [466] Je vous en ai donné. Ah, I'm sorry, I gave you more than one?

A. Yes, you gave me four (4) or five (5).

EXHIBIT B-150: Report entitled - Comments on the
BioInitiative Working Group
Report (BioInitiative Report)
October 30, 2007

Me DOMINIQUE NEUMAN:

For the record, we've already filed under Exhibit 0092, SÉ-AQLPA-7, document 21, it's the COMAR article. It's a group that expressed a lot of criticism against the Bioinitiative Report. And they quote all the reports that probably my consoeur is about to deposit. So, we've already filed all the criticism that my consoeur will probably file separately by showing each individual report. But you already have the COMAR report. And

maybe we've helped my consoeur because we provided the list of the critics, so maybe we'll get all the criticism one by one right now, but they're all synthesized in one single document.

Me MARIE-JOSÉE HOGUE:

It's not going to be very long.

Q. [467] So, the first one has been issued by the EMF-NET Coordination Action. I imagine you are aware of this criticism of the BioInitiative Report?

A. Actually, I'm not sure that I know what this organization is.

Q. [468] I'm suggesting actually that it's a coordinating committee of the... scientific coordinating committee of the European Commission. Are you familiar with it?

A. No, but that doesn't really matter.

Q. [469] So, I would like to file it. I'm showing you now the position that has been taken by the Health Council of the Netherlands, and I'm reading,

Last year, a report was published that is playing an increasingly prominent role in the debate on electromagnetic fields and health, the BioInitiative Report. It contains recommendations...

I understand however that you said it's not

recommendations actually that we found in the...

A. It's not recommendations for a standard.

EXHIBIT B-0151: Report from the Health Council of
the Netherlands.

Q. [470] ... in the BioInitiative Report.

A. Right.

Q. [471] But are they recommendations? I understand
you're making a distinction, it's not
recommendations for standards?

A. Well, they are recommendations for goals, yes.

Q. [472] For goals.

A. But not for rigorous standards.

Q. [473] Not for rigorous standards, okay. So:

It contains recommendations to reduce
the exposure limits for
electromagnetic fields that are
currently applied in the Netherlands
and in many other countries. In an
advisory report, the Electromagnetic
Fields Committee of the Health Council
now gives its opinion as to the
scientific value of the BioInitiative
Report. The committee concludes that

this report is not an objective and balanced reflection of the current state of scientific knowledge and does not provide any grounds for revising the current views as to the risk of exposure to electromagnetic fields.

And that was adopted by the Health Council of the Netherlands. Are you aware of any other countries council or organizations, official organizations within a country, that have taken a different position vis-à-vis the BioInitiative Report? And I'm sure there's some that have not taken any position, I'm asking if you're aware of anyone that has supported or otherwise accepted the BioInitiative Report?

A. I don't really follow the pluses and minuses on whether they liked the BioInitiative Report. I'm aware that there are some, I believe it's Austria, but I couldn't tell you definitely. The BioInitiative Report got a lot of response, much of it negative, because it was very threatening to the status quo and it pushed the limits in terms of providing a lot of evidence for effects at these very low exposure levels.

Q. [474] You're making reference to Australia. I'm

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going to show you the document that has been issued
by the Australian Centre for Radiofrequency,
Bioeffects Research.

EXHIBIT B-0152: Report entitled - Australian
Centre for Radiofrequency
Bioeffects Research (ACRBR).

And I'm quoting from the second part of the second
page,

Overall, we think that the
BioInitiative Report does not progress
science, and we'll agree with the
Health Council of the Netherlands.

And then, they are referring to the document I
showed you before,

That the BioInitiative Report is not
an objective and balanced reflection
of the current state of scientific
knowledge. As it stands, it merely
provides a set of views that are not
consistent with the consensus of
science and it does not provide an
analysis that is rigorous enough to
raise doubt about the scientific

consensus.

16 h 00

Me MARIE-JOSÉE HOGUE:

I want to produce it.

Q. [475] You did annex to your report, Mr. Carpenter, a draft document which is dated from the early two thousand (2000). Do you know if this draft has been adopted in any ways?

A. I'm sorry, which draft are you referring to?

Q. [476] That you have annexed to your report. You annexed a draft.

Me DOMINIQUE NEUMAN:

A draft on what subject?

Me MARIE-JOSÉE HOGUE:

There's only one draft document annexed to the report itself. Sorry, I'm just looking for it, I don't see it on my desk. Ah, okay.

Q. [477] It's the draft by the World Health Organization that you have filed with your report. It's dated, it's a draft dated May second (2nd), two thousand three (2003).

A. I don't know...

Q. [478] I'm going to show it to you. It's the draft document that you filed.

A. Right. But I was saying I don't know whether it's

been finally published.

Q. [479] Ah, okay. I thought that you didn't know what document I was talking about.

A. No. No, I know what document you're talking about, but I don't know whether it's been finalized.

Q. [480] Okay. Have you made any verification since you filed it as a document attached to your report? Have you made any verification to see if this draft has been adopted?

A. No, unfortunately I didn't.

Q. [481] I don't have any further question for Mr. Carpenter. Thank you, Sir.

A. Thank you.

16 h 04

EXAMINED BY THE PRESIDENT :

Q. [482] J'aurais une question. Mr. Carpenter, you were referred to, a couple of minutes ago, to a report by the California Council on Science and Technology entitled "Health Impact of Radio Frequency Exposure from Smart Meters". Your attorney filed previously, the number is 0041, a review signed by you on the paper of the University of Albany, you remember that?

A. Yes.

Q. [483] And it starts by,

This is a report on the review of the California Council on Science and Technology document, "Health Impact of Radio Frequency from Smart Meters.

So, you go on and it's a comment on your part?

A. Right.

Q. [484] And you start your comment by,

This is the document...

Well, speaking of the review of the California Council, you say,

This document is not an accurate description of the state of the science on the issue of radio frequency fields, and thus, is full of inaccuracies. My specific concerns are as follows.

And then, you start by writing,

The benefit of smart meters in entirety to the utilities, and is economic in nature. If they install smart meters, they can fire those individuals who at present are employed to go around reading meters. Thus, this is a job-killing proposal, and will increase unemployment in a

state that already has too much.

I presume you refer to the State of New York?

A. That was the State of California.

Q. [485] And you conclude your comment on this report
by saying,

Clearly, the answer to this dilemma is
not to install wireless smart meters
to begin with.

What am I supposed to make of such a comment on
your part?

A. Well, it doesn't say that you shouldn't install
smart meters. It said wireless smart meters. Now,
in between that first comment and the last comment,
were sentences that detailed why I felt that the
California position ignored the science on the
health hazards that come from exposure to wireless
radiation.

Now, I am not advocating not installing
smart meters. I mean, that letter was probably,
what, two years ago, something like that. I think
that there are a number of states in the U.S. that
have only installed wired smart meters. The issue
is the cost. And I understand that that's
expensive. But the idea that... Anyway, I mean, I
not an economist, so I probably shouldn't be

talking about the economics of the situation because I don't know the details. But I do know that the idea that smart meters will communicate electronically is going to result in the fact that you don't have to hire people to go around reading meters every month or two. That there should be access to the information, both for the utility and for the consumer, that I don't object to. But whether or not you have wired smart meters or you have smart meters that convey information with wireless radiation, with radio frequency radiation, but do so in a fashion that does not excessively expose the home owner, the family, the public, is the point that I was trying to make in that letter.

Q. [486] Thank you. Avez-vous des questions en réinterrogatoire?

16 h 15

Me DOMINIQUE NEUMAN:

I have questions to ask Dr. Carpenter, and it will be approximately twenty (20) minutes. I'm ready to proceed if the Board wishes. Otherwise, we could discuss with Dr. Carpenter if he's capable of coming back at another date, but it's...

LE PRÉSIDENT :

Bon, on va prendre une pause de cinq (5) minutes

peut-être pour... parlez-vous puis... bon, moi, je
n'ai pas de problème à ce qu'on poursuive encore
pour... si c'est une demi-heure, là, on peut
prendre... ça va, oui?

Me MARIE-JOSÉE HOGUE :

Moi, je n'ai pas d'objection du tout.

LE PRÉSIDENT :

Bon, O.K. Alors, on va prendre d'abord dix (10)
minutes et puis... O.K.?

SUSPENSION

REPRISE

LE PRÉSIDENT :

Allez-y.

RE-EXAMINED BY Me DOMINIQUE NEUMAN:

Q. [487] Good afternoon again, Dr. Carpenter. We'll go
to the CCST, the California Council on Science and
Technology's document, which is B-0147, which was
the subject of the last question that Mr. the
Commissioner asked you. I would direct you to page
26 of that document. The last paragraph of that
document starts with,

If future research were to establish a
causal relationship...

Could you read, maybe out loud, the few sentences here in the paragraph?

A. If future research were to establish a causal relationship between RF emissions and negative human health impacts, industries and governments worldwide would be faced with difficult choices about practical alternatives to avoid and mitigate such effects. This would greatly affect the wide-spread use of mobile phones, cordless phones, Wi-Fi devices, smart meters, walkie-talkies, microwave ovens, and many other everyday appliances and devices emitting RF. If such a hypothetical scenario were to occur, smart meters could conceivably be adapted to none-wireless transmission of data. However, retrofitting millions of smart meters with hard-wire technology could be difficult and costly.

Q. [488] So, the CCST discusses the possibility of retrofitting millions of smart meters to make them wired after having initially installed them as

wireless. Is there a relationship between that sentence and the comments that you made in the letter that was discussed a few minutes ago by...

A. Absolutely. The point is that when one is beginning to implement technology, there is an initial cost, but depending on what technology you choose, there is a long-term cost. And the issue here I think is, while it's clear that wired technology will be expensive in the short term, would wireless smart meters be more expensive in the long term, as evidence develops on the magnitude of the risk associated with wireless technology in general.

Q. [489] So, your position was that the idea of retrofitting was a costly one and it was better to choose an alternative to avoid...

A. That's right. And a number of States in the U.S. have gone exclusively to wired technology for smart meters.

Q. [490] I will go to page 9 of that same report. In the middle of that page, there's a paragraph entitled, Standards of Proof of Certainty in Public Health . Could you read out loud this paragraph, the two paragraphs of this sentence?

A. In this report, scientific evidence is the primary consideration. Upon

consulting with the California Department of Public Health, it is noted that using scientific evidence to shape public policy is always challenging. The standards for declaring certainty within a scientific discipline, which are based on the results of statistical testing, may be unrealistic or inappropriate for making public policy decisions, particularly those with potential impacts on population health. Statistical tests usually rely on the convention of whether the results of a given study are significant to reject the null hypothesis of no effect (i.e., of a given exposure). This is effectively a standard of ninety-five percent (95%) certainty analogous to the legal standard of proof, "beyond a reasonable doubt".

Q. [491] Yes. And on the next page, Sir, the first paragraph?

A. Policy makers constantly weigh these factors, consciously or unconsciously,

as they interact with stakeholders to craft good public policy. In one situation, they might consider high-cost mitigations for high-severity effects with high-certainty evidence. In another situation, the high-severity effects and "more likely than not" certainty of those effects, they might choose low-cost mitigations.

Q. [492] Yes, and the last sentence?

A. This report did not extend beyond the scientific evidence realm with which we are charged leaving these issues to policy makers for whom this report has been delivered.

Q. [493] So, we see that the aim of that report was to establish a proof of certainty that would be ninety-five percent (95%) certainty beyond a reasonable doubt analogous to the legal standard of proof. Was your report aimed at establishing a ninety-five percent (95%) certainty analogous to the legal standard of proof beyond a reasonable doubt?

A. You're asking about my letter?

Q. [494] No, your report, your report.

A. My report for this thing?

Q. [495] Yes, in this present case.

A. My report was to document those cases where there is a ninety-five percent (95%) certainty and to try to fulfil the mission that I felt I was charged with, was to present the state of science. I think on the overall, you know, maybe we're at ninety percent (90%) certainty on all these issues. I think we're higher than that for cancer. But the punch line is that there is sufficient reason for concern that we're going to, with new information, document that exposure to radio frequency radiation is a very serious risk to human health. And therefore, at the present time, we should take every action that we can that would be precautionary, that would reduce excessive human exposure.

Q. [496] Was the aim of your report to demonstrate that there is a certainty of causality or a certainty of risk?

A. No, it certainly was not to demonstrate a certainty of causality. I don't see that there is a certainty of causality. Causality means one hundred percent (100%) proof and that is never achieved in biology or medicine. But I strove to demonstrate where

studies have reached the statistically significant results of ninety-five percent (95%) confidence. But whether or not all reports have reached that level of certainty, I argue that there's enough reason for precaution, so that we shouldn't have to go and retrofit everything ten (10), fifteen (15), twenty (20) years from now. That if we take logical steps to reduce exposure now, it will be in the long run cost effective and protective of human health.

16 h 25

Q. [497] And in this report there's also a discussion on page 15 about non-thermal effects. If you can read out loud the paragraph entitled, Non-Thermal Effects ?

A. There are emerging questions in the medical and biological fields about potential harmful effects caused by non-thermal mechanisms of absorbed radio frequency radiation. Complaints of health impacts from "electromagnetic stress" have been reported with symptoms including fatigue, headache and irritability. Some studies have suggested that RF

absorption from mobile phones may disrupt communication between human cells which may lead to other negative impacts on human biology. While concerns of brain cancer associated with mobile-phone use persist, there is currently no definitive evidence linking mobile-phone usage with increased incidents of cancer. But due to the recent nature of the technology, impacts of long-term exposures are not known. Ongoing scientific study is being conducted to understand non-thermal effects of long-term exposure to mobile phones and smart meters, et cetera, especially the cumulative effect from all RF emitting devices, including that of a network of smart meters operating throughout a community.

LE PRÉSIDENT :

Maître Neuman, c'est quoi votre définition d'un réinterrogatoire, vous? On est au stade du réinterrogatoire, c'est quoi votre définition?

Me DOMINIQUE NEUMAN:

Well, based on the... there were new elements...

LE PRÉSIDENT :

Vous pouvez parler en français.

Me DOMINIQUE NEUMAN :

Oui. Il y a eu des éléments nouveaux qui ont été déposés et je vais demander à monsieur Carpenter de commenter certains des éléments qui ont été déposés.

LE PRÉSIDENT :

Mais là, vous lui faites lire des paragraphes de documents qui ont été déposés.

Me DOMINIQUE NEUMAN :

Oui.

LE PRÉSIDENT :

Un réinterrogatoire, là, peut réinterroger, c'est marqué là, maître Neuman peut réinterroger soit sur des faits nouveaux révélés par le contre-interrogatoire, soit pour expliquer les réponses qu'il a données aux questions posées par l'autre partie. Alors là, il y a eu des documents, il a été contre-interrogé, il y a des documents qui ont été déposés, vous lui faites lire des extraits de ces documents-là.

Me DOMINIQUE NEUMAN :

Oui, je vais lui demander de commenter comment...

LE PRÉSIDENT :

Alors, posez des questions pour clarifier des réponses qu'il aurait données, mais on ne recommence pas la samba, là, tu sais, ce n'est pas n'importe quoi, ça, un réinterrogatoire.

Me DOMINIQUE NEUMAN :

Oui, mais je vais lui demander de commenter ce document. Ma consœur lui a demandé de commenter certaines autres pages ou certains autres aspects, je demande de...

LE PRÉSIDENT :

Bien, peut-être que s'il y a des choses qui n'étaient pas claires dans ce qu'elle lui a demandé de commenter, c'est ça qu'il faut que vous fassiez préciser. Parce que là, on peut s'en aller... on peut parler... on peut en faire lire longtemps des documents, il y en a des... ça commence à se mesurer en pouces.

Me DOMINIQUE NEUMAN :

Oui, et...

Me MARIE-JOSÉE HOGUE :

Je veux simplement ajouter que je n'ai pas demandé de commenter les articles. J'ai vérifié pourquoi

certaines articles n'apparaissaient pas dans le rapport compte tenu du mandat qui lui avait été confié par la Régie. Alors, si là, on entre dans des commentaires, bien là, ce qu'on fait c'est qu'on tombe dans l'opinion de monsieur Carpenter sur les articles qui ont pu être déposés. Ce n'est pas l'exercice que j'ai fait.

LE PRÉSIDENT :

Non, et puis on ne va pas aller dans cette direction-là du tout, je vous le dis tout de suite. Y a-t-il quelque chose dans les réponses qu'il a données aux questions qui lui ont été posées qui n'était pas clair que vous voulez faire clarifier? Ça, ça va. A part de ça, on ne recommence pas. Est-ce que je suis clair?

Me DOMINIQUE NEUMAN :

D'accord.

Q. [498] Dr. Carpenter, I'll go to another document, B-136, which is a document by Paolo Vecchia.

A. 136. I'm sorry, I don't have that in front of me. Oh the... yes. Okay.

Q. [499] 136. At page 307 of this document, you were asked to comment the second paragraph of the abstract. It was a section which, well, on my copy, is in yellow, I don't know if it's the same on your

copy. You were asked to comment the first sentence of the second paragraph, which says,

Results of epidemiological studies to date give no consistent or convincing evidence of a causal relation between RF exposure and any adverse health effect.

You were asked to explain why you didn't include the mention of this research, of this document, in your own report.

A. Well, I agree with that statement. The key word is « causal ». Causal means one hundred percent (100%) proof. And none of the studies to date can be considered to provide one hundred percent (100%) proof. I stated earlier that that doesn't occur in biology and medicine.

Now, on the other hand, the studies to date do demonstrate quite consistent and convincing associations between cell-phone usage and brain cancer and between RF transmitting towers and leukemia. Now, are those associations causal? That's a very tough barrier to achieve. So, I think this is a word that's often used by people that want to minimize the importance of the associations and to not argue that we should go for precaution.

I agree that there's no causal evidence, but I argue strongly that there are strong associations that suggest there may be causal factors.

16 h 30

Q. [500] You were shown, under B-149, a graph.

A. Yes.

Q. [501] In French, in which I think you understood that the word "jamais" means never, at the bottom of the graph...

A. Yes.

Q. [502] ... the green section?

A. Yes, I have it. I have it.

Q. [503] Okay. So, the graph describes certain data that are described as coming from the Interphone Study on the never, on never. Could you elaborate on that and whether or not... well, what's your perception of these data excerpted from the Interphone Study?

A. Well, I think the issue that I have with this plot is if one goes to the appendix table 2, which has exactly this data for glioma, it shows and odds ratio of... overall odds ratio of one point five five (1.55) for regular users, ages one to four, it shows and odds ratio of two point three seven (2.37), for five to nine it shows a significant

odds ratio of one point four oh (1.40), and for more than ten (10) years a significant odds ratio of one point five seven (1.57).

Now, obviously in this... I didn't check that these are numbers from the main body of the text, but these are clearly data that are contradictory to the numbers plotted there. I reiterate that I don't think that any exposure to radiofrequency radiation is going to cause as much disease as smoking, but I think we have evidence that it is causing disease already, and likely will cause greater disease, and therefore it's only logical that we do what we can to reduce exposure and protect human health.

Q. [504] There was some discussion in the questions that were asked to you about the Interphone Study as to whether or not one should look at the annexes or one should look at another part which has been described as the main document of the main report, I don't recall what was the term used by my consoeur. What's your comment as to whether or not are the annexes part of the... are they main report, are they not the main report? Could you comment?

A. It's all part of the report and my argument would

be that you should look at everything and look for the data that appears strongest and that's clearly found in the annex.

- Q. [505] So, the summary that is in the... what's called the main report, is it a correct reflection of the data that exists and that is...
- A. It quotes the date on hours of use correctly but it does not... it focuses on ever/never rather than long-term usage. And the important data is found in the appendix.
- Q. [506] And the ever/never, could you just elaborate? Ever means someone...
- A. If you ever used a cell phone in your life versus you never used a cell phone in your life, and what they found was that ever using a cell phone, even once, was protective against brain cancer. Obviously, a result that cannot be true.
- Q. [507] And ever versus never, is it the main focus that one should be focusing on?
- A. Absolutely not. If... there's every reason to expect that if there are diseases from radio frequency radiation like every other environmental exposure, more is going to be worse. And more is both a matter of intensity and a function of duration of exposure.

Q. [508] Still on the Interphone report, there was in the... what has been called the main document, some results are dismissed by the authors of the Interphone report as being caused by bias. And what's your stand on that?

A. I don't think they were really dismissed by bias, but they said because this ever/never result was not biologically plausible, there must be something that was responsible. It could be bias or it could be some fault in the design. But finding a result that is just not believable indicates something is wrong in the study.

16 h 35

Q. [509] At the beginning of my consoeur's questions to you, she asked you to compare the power density of smart meters with power densities by cell phones, which she described as being one to ten million (10,000,000) microwatts per square meter. Do you agree that that's the power density of a cell phone?

A. Well, that number must be spikes and use because, obviously, six million (6,000,000) is the standard and ten million (10,000,000) is considerably in excess of that. So, the issue is really what is the average exposure from a cell phone and not just the

spikes.

Q. [510] The FCC standard of six million (6,000,000),
is it an average or is it a measure of the spikes?

A. It's an average over a period of six (6) minutes,
as I understand it.

Q. [511] You were asked if according to the data that
was provided to you by the client concerning meters
outside buildings, that were measured at one meter
distance, if... so, that data was provided to you.
And you were asked what was your opinion on the
exposure, whether it's... well, of people that may
pass near these meters.

A. Well, clearly, there, the issue...

Me MARIE-JOSÉE HOGUE :

Là, je vais... ça, ce n'est pas du
réinterrogatoire, je n'ai pas été là du tout. Tout
ce que j'ai demandé à cet égard-là, et c'est ce que
le Dr Carpenter a indiqué, il n'était pas lui-même
en mesure de faire les calculs au niveau des
moyennes, au niveau de la densité. Alors, la seule
question que je lui ai posée, c'est s'il était
exact que dans la mesure où la puissance moyenne
était inférieure, il serait à l'intérieur de ce qui
était recommandé par BioInitiative. C'est les
seules questions que j'ai posées.

Alors, je ne pense pas qu'on puisse, alors que le témoin a dit qu'il n'avait pas connaissance de ces éléments-là, aller là, où veut aller maître Neuman.

LE PRÉSIDENT :

Qu'est-ce que vous demandez, Maître Neuman?

Me DOMINIQUE NEUMAN:

This is not where... where my consoeur thinks I'm going is not where I'm going. My consoeur had asked about measurements taken at one meter of distance. Maybe I should rephrase my question.

Q. [512] Do you have any data of the power density of outside meters at less than one meter of distance?

A. Well, clearly, the intensity of the radiofrequency radiation will fall off with distance. We have only measures at one meter. But even a on the outside of the house, if you're closer than one meter, it's going to be much higher. And what I was informed in the document is that the actual antenna is about two or three centimeters from the outside of the meter. So, anybody on the outside, and my concern would be particularly a child, could get right up adjacent to the meter, should the meter be mounted near ground level. So, again, a precaution, mount meters high so people aren't walking by them. Build

a cage around the meter so that nobody can get within one meter of the smart meter. But the exposure could be very high if you're much closer than one meter.

Q. [513] You were asked questions about the AGNIR report -- A-G-N-I-R, which is the Advisory Group on Non-Ionizing Radiation, commissioned by the British HPA -- you were asked to indicate if you had expressed the results, the opinion, of that committee. And I would direct you to paragraph 62.a. of your own report, your own amended report.

A. Yes?

Q. [514] Yes. So, the first sentence of 62.a.?

A. On April 25th, 2012, the British Independent Advisory Group on Non-Ionizing Radiation (AGNIR), commissioned by the British Health Protection Agency (HPA), arrived at the conclusion that there is still no "convincing evidence" that RF field exposures below guideline levels cause health effects in adults or children. Nevertheless, the British Health Protection Agency notes that "AGNIR considered there are still limitations

to the published research that preclude a definitive judgement, in particular AGNIR refers to possible effects on the electroencephalogram, record electrical signals from the brain, that has been reported at exposure levels similar to the highest ones that can occur when using mobile phones. AGNIR cautions that these effects have not been conclusively established and considers it unclear whether they would have any health consequences.

Q. [515] So, you did describe the results of AGNIR in your report and also the comments that HPA made after that?

A. Correct.

16 h 43

Q. [516] I would then go to paragraph 46 on page 25 of your report.

A. I say, the scientific community is divided in its acceptance of the numerous research findings like the above showing a link between RF exposure and non-thermal health effects.

- In section 6.1, I will discuss the division

within the scientific community and how it effects standard-setting organizations.

- In section 6.2, I will examine the recent evolution of various organizations toward the adoption of precautionary measures as a matter of taking into account scientific uncertainty, even as the standards of RF exposure remain unchanged at the moment.

Q. [517] So, my consoeur has asked you if you had discussed in your report the fact that there were negative results also, not just positive ones, and I understand that this is the subject of the whole of section 6 of your report?

A. That is correct. I don't say negative results in those words, but that is what this introductory paragraph is about.

Q. [518] So, I have no further questions.

16 h 44

LE PRÉSIDENT :

Merci, Maître Neuman. Alors, je pense qu'on va ajourner à mardi matin neuf heures trente (9 h 30).
Je vois maître Paquet.

Me DOMINIQUE NEUMAN :

Est-ce qu'il est prévu que nous revenions aussi le vingt-cinq (25)? Parce que le vingt-cinq (25), j'ai

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déjà un double conflit. Donc, ce serait un peu
difficile d'en avoir un troisième.

LE PRÉSIDENT :

Je n'ai pas le calendrier devant moi.

Me DOMINIQUE NEUMAN :

Parce que la Régie avait offert le vingt-cinq (25),
avait offert le vingt-deux (22) et le vingt-cinq
(25).

LE PRÉSIDENT :

On va d'abord libérer le docteur, monsieur
Carpenter.

Mister Carpenter, thank you for your testimony.

DAVID O. CARPENTER :

Thank you very much.

LE PRÉSIDENT :

I know it is not easy to be a witness. It is much
easier to seat here than to seat there. And thank
you for your patience.

DAVID O. CARPENTER :

Thank you.

LE PRÉSIDENT :

And have a good week-end in Montreal.

DAVID O. CARPENTER :

Thank you very much.

Me DOMINIQUE NEUMAN :

Thank you very much.

LE PRÉSIDENT :

Maître Paquet.

Me GENEVIÈVE PAQUET :

Oui. Bonjour, Monsieur le Régisseur. C'est simplement pour vous aviser concernant la contre-preuve. Le document a été déposé par le Distributeur HQD-8, Document 1. Puis, là, en parlant avec mon confrère, maître Hébert, il nous a gentiment proposé de traduire le document pour notre expert monsieur Finamore, parce que, nous, on aurait pu demander la traduction aussi, mais on considérerait que ça irait probablement plus vite si c'était fait par le Distributeur.

Tout ça pour dire qu'on m'informe que ça va être disponible en anglais mercredi. Donc, pour le GRAME, on ne sera pas en mesure de procéder au contre-interrogatoire mardi, c'est sûr, sans avoir pu consulter le document en anglais. Donc, c'était simplement pour vous aviser de la situation par rapport à ça.

LE PRÉSIDENT :

La contre-preuve, vous aviez prévu... On commence mardi matin avec la contre-preuve. Non, il y a

madame Beausoleil qui doit... C'est ça. Oui, oui, on va entendre madame. C'est à la demande du sous-ministre du ministère de la Santé et des Services sociaux, madame Beausoleil veut venir faire sa présentation. Et après ça, on commencerait immédiatement la contre-preuve. Là, si le document est prêt juste mercredi en anglais, vous aviez prévu combien de temps pour la contre-preuve?

Me MARIE-JOSÉE HOGUE :

Bien, nous, on prévoyait un maximum, un gros maximum de deux heures au niveau de toute la contre-preuve qu'on présenterait. Évidemment si l'expérience passée se confirme, je pense qu'on n'aura pas terminé en fin de journée lundi avec les contre-interrogatoires. Alors, c'est certain, je pense, qu'il y en a plusieurs présents qui pourraient, par ailleurs, contre-interroger lundi... mardi. Je m'excuse. Lundi, on est tous en congé.

LE PRÉSIDENT :

On va vous mettre à la queue, comme on dit, pour le contre-interrogatoire.

Me MARIE-JOSÉE HOGUE :

C'est ce que je suggère.

LE PRÉSIDENT :

Ça irait dans les meilleures hypothèses, dans la meilleure hypothèse mercredi.

Me GENEVIÈVE PAQUET :

Écoutez, Monsieur le Régisseur, c'est parce que, moi, j'ai absolument besoin d'avoir la position de mon expert par rapport à ça, par rapport, c'est un document d'environ trente (30) pages. Il y a beaucoup d'informations. C'est toute une contre-preuve qui porte sur son témoignage. Donc, c'est vraiment essentiel qu'il en prenne connaissance du document de façon détaillée pour m'aider à préparer les questions. Et puis ensuite, on pourra évaluer s'il est nécessaire que lui vienne pour le contre-interrogatoire également. Donc, là, on n'a pas encore décidé si monsieur devra venir. On va pouvoir le décider aussitôt qu'on va avoir le document en anglais. Ça, on peut s'engager à vous donner une réponse rapidement par rapport à ça.

LE PRÉSIDENT :

La seule autre solution que je vois, c'est que si la contre-preuve est terminée mardi, là, si c'est pour deux heures et qu'il n'y a pas énormément de contre-interrogatoires, bien, on va suspendre, et puis on reprendra avec votre contre-interrogatoire

plus tard. Mais, là, ça veut dire de faire
revenir... Combien de témoins en contre-preuve?

Me MARIE-JOSÉE HOGUE :

Il y a plus qu'un aspect qui va être couvert au
niveau de la contre-preuve. Alors, ça dépend encore
là sur quel point il y aurait du contre-
interrogatoire du côté du GRAME.

Me GENEVIÈVE PAQUET :

En fait, c'est sûr que l'idéal pour le GRAME, ça
aurait été que monsieur Finamore puisse être
présent pendant aussi la présentation. Là, on
comprend qu'on ne peut pas tout avoir. On serait
prêt à ce qu'ils présentent la contre-preuve et
puis on fera traduire éventuellement les notes
sténographiques. Mais...

LE PRÉSIDENT :

Mais, là, vous, je ne l'ai pas vu moi la contre-
preuve, vous, vous l'avez vue. En tout cas, vous
allez avoir la contre-preuve par écrit. Vous pouvez
la regarder. Vous allez voir quelle partie de cette
contre-preuve là concerne monsieur Finamore.

Me GENEVIÈVE PAQUET :

C'est presque tout le document, Monsieur le
Régisseur.

LE PRÉSIDENT :

C'est presque tout le document. Bon. Alors, à ce moment-là, bien...

Me GENEVIÈVE PAQUET :

Moi, je l'ai regardé, mais je vous dis, je ne suis pas en mesure moi-même d'évaluer quels aspects sont les plus importants et puis si on a besoin de sa présence. Donc, c'est vraiment lui qui va pouvoir évaluer ça quand on va lui avoir transmis le document en anglais.

Me MARIE-JOSÉE HOGUE :

Regardez, je pense que, de toute façon, les chances que tout le monde complète leur contre-interrogatoire mardi, compte tenu que madame Beausoleil doit témoigner, il risque d'y avoir des questions à madame Beausoleil par divers avocats. Ensuite, on a notre contre-preuve. Je pense que ça va nous reporter à plus tard. Et ma compréhension, c'est que la semaine prochaine, les seules dates qui sont fixées, c'est le vingt-deux (22) et je comprenais le vingt-cinq (25). Mais, là, ce n'est pas le vingt-cinq (25). Donc, c'est le vingt-deux (22). Le vingt-deux (22) seulement. Alors, ça risque de nous... de toute façon de vous laisser le temps d'avoir...

Me PIERRE TOURIGNY :

Si je peux me permettre, Monsieur le Régisseur.

LE PRÉSIDENT :

Oui.

Me PIERRE TOURIGNY :

Ma longue expérience devant la Régie m'amène à
suggérer qu'on fasse un tour rapide des
intervenants pour savoir qui peut, quand, la
semaine prochaine.

LE PRÉSIDENT :

Oui.

16 h 50

Me PIERRE TOURIGNY :

Et l'autre semaine aussi tant qu'à y être, parce
qu'il s'agit qu'il nous en manque un ou deux pour
qu'on soit en somme dans une position difficile et
que ces gens-là ne puissent pas entendre toute la
preuve, contre-preuve.

LE PRÉSIDENT :

Alors, peut-être, qui n'est pas disponible la
semaine prochaine. C'est plutôt ça la question.

Me PIERRE TOURIGNY :

Ça pourrait être donné ça mardi, effectivement, et
on verra pendant la journée de mardi comment tout
ça se déroule. Et, là, on pourra ensuite, avec les

disponibilités d'un peu tout le monde, trouver une date pour la continuation, comme on a fait déjà. Remarquez, c'est plate de traîner ça, mais c'est peut-être la seule façon de le faire.

Me VÉRONIQUE DUBOIS :

Si les parties pouvaient me transmettre à leur arrivée mardi... les deux semaines, la semaine prochaine et la semaine suivante, les dates auxquelles elles seront disponibles en fonction du calendrier, on pourra colliger le tout et revenir avec les dates auxquelles on pourra continuer et terminer.

LE PRÉSIDENT :

Oui. Il va falloir aussi parler de l'argumentation. Je sais qu'à un moment donné, il a été question d'argumenter par écrit.

Me MARIE-JOSÉE HOGUE :

Tout à fait.

LE PRÉSIDENT :

Moi, je n'ai pas de problème avec ça. Est-ce que c'est toujours...

Me MARIE-JOSÉE HOGUE :

Moi, je pense que c'est une bonne idée. Sans ça, on va être ici... Alors oui.

LE PRÉSIDENT :

On fixera un calendrier qui convient à tout le monde, d'abord à Hydro-Québec, après ça aux intervenants. Et la réplique, évidemment, Hydro-Québec est appelée à répliquer à douze personnes. Il faut donner le temps requis. En tout cas, on parlera de ça la semaine prochaine.

Me GENEVIÈVE PAQUET :

Juste un dernier commentaire qui est important. Monsieur Finamore, si on considère qu'il doit être présent pour le contre-interrogatoire, il serait disponible seulement dans la semaine du vingt-cinq (25) au vingt-neuf (29) juin, comme je l'avais indiqué dans ma correspondance. Donc, c'est simplement pour vous en informer.

LE PRÉSIDENT :

Ça, ça retarde énormément. En tout cas, pensez-y en fin de semaine. Et puis avant de le faire venir, il faudrait que ce soit vraiment nécessaire.

Me GENEVIÈVE PAQUET :

Oui, oui, effectivement.

LE PRÉSIDENT :

Je comprends que vous avez le droit de contre-interroger avec votre expert assis à côté de vous, mais quand même.

Me GENEVIÈVE PAQUET :

Comme je vous dis, il va falloir l'évaluer.

Me MARIE-JOSÉE HOGUE :

Il faut que ce soit à l'intérieur de limites qui sont raisonnables. Les experts doivent s'assurer de se rendre disponibles aussi. On ne va pas tous attendre après un expert.

Me GENEVIÈVE PAQUET :

Il est venu plusieurs fois...

LE PRÉSIDENT :

Il y a beaucoup de monde d'impliqué puis il y a beaucoup de sous d'impliqués. Je vois les dollars s'évaporer, moi, d'ici. T'sais, ça coûte cher, ça, là.

Me GENEVIÈVE PAQUET :

Considérant, par exemple que ça porte sur sa preuve, je pense que c'est important qu'il soit...

LE PRÉSIDENT :

D'accord.

Me GENEVIÈVE PAQUET :

Merci.

LE PRÉSIDENT :

Donc, cela étant dit, avez-vous d'autre chose à ajouter, Maître Neuman?

Me DOMINIQUE NEUMAN :

Oui. Est-ce que je dois comprendre que ma consoeur d'Hydro-Québec, finalement, n'aura pas de deuxième partie à sa contre-preuve comme elle en avait fait part?

Me MARIE-JOSÉE HOGUE :

Bien, j'ai dit qu'on attendrait le témoignage de monsieur Carpenter. Je vais quand même prendre le temps de consulter mes clients.

LE PRÉSIDENT :

Bien oui.

Me MARIE-JOSÉE HOGUE :

Ce n'est pas ma décision, même si vous m'identifiez comme d'Hydro-Québec. Ce n'est pas ma décision.

Me DOMINIQUE NEUMAN :

Est-ce que ma consoeur est déjà en mesure d'identifier le nom d'une personne qui serait éventuellement présentée comme possible expert?

Me MARIE-JOSÉE HOGUE :

Non.

LE PRÉSIDENT :

Alors, sur ce, nous allons ajourner. Je vous remercie. Puis je vous souhaite une bonne longue fin de semaine.

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