Dr. Magda Havas, B.Sc., Ph.D.

Environmental & Resource Studies, Trent University, Peterborough, ON, Canada, K9J 7B8
phone: (705) 748-1011 x7882 **fax**: (705) 748-1569 **email**: mhavas@trentu.ca

July 8, 2008

Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, Suite 2700
Toronto, ON M4P 1E4

RE: Response to OEB Panel on Stray Voltage EB-2007-0709

As a preamble I would like to state that I submitted a document in November 2007 to be considered by the OEB Panel. Based on the final report and list of submissions, I find no reference to that document nor do I find any reference in the final report that the panel is aware of, or concerned about, frequencies other than 60 Hz. It is my belief, based on studies and my own research that the high frequencies are of primary concern for cow health and productivity as well as human health. We have evidence that this "dirty electricity" is biologically active and affects people with electrical sensitivities as well as those with diabetes and neurological disorders.

I attach as part of my "response" email correspondence with Stephen Cain (July 9, 2008, November 24, 2007) as well as Maria Van Bommel (November 24, 2007), who was pivotal in bringing this issue to the attention of the Minister of Energy. These are at the bottom of this letter. I also attach a report consisting of 38 slides that documents the following points:

1. Why ground current (stray voltage) is becoming a growing problem.
2. Ways to mitigate this problem: power line filters, 5-wire system
3. What the utilities have done to increase the severity of this problem, neutral to earth connections to save money in wiring.
4. How to determine if stray voltage (ground current) is coming from off farm sources.
5. Examples of ground current problems on an Ontario Dairy Farm (Port Perry Ontario) and on a Manitoba Dairy Farm.
6. National Electrical Safety Code rules pertaining to ground current.
7. Specific quotes from "Effects of Electrical Voltage/Current on Farm Animals that are highly pertinent to what we are experiencing in Ontario.

8. Identification of levels of ground current that are likely to be "safe". This includes 60 Hz as well as higher frequencies in the kHz range.
9. Scientific evidence that ground current/contact current enters homes and is associated with childhood leukemia.
10. Information about electromagnetic hypersensitivity (EHS), definition and prevalence.
11. Recommendations for utility to reduce ground current and to provide high quality energy to their customers.

Please acknowledge receipt of this email submission. The paper copies should arrive shortly.

Sincerely,
Magda Havas
Associate Professor

****

Submission #1: Email correspondence with Stephen Cain and Maria Van Bommel regarding the OEB Panel on Stray Voltage (EB_2007-0709)

Begin forwarded message:
From: Magda Havas <mhavas@trentu.ca>
Date: July 9, 2008 1:16:49 AM EDT (CA)
To: stephen.cain@oeb.gov.on.ca
Subject: response to OEB Panel on Stray Voltage EB-2007-0709

Stephen Cain,

On November 24, 2007, I submitted a document that I asked you to share with the OEB panel on Stray voltage. I have read the final report and find no mention of this document or any reference to high frequencies of any substance that may indeed be the primary problem on some farms.

At the same time I sent an email to Maria Van Bommel, who, as you know, initiated the Private Member's Bill that lead to the directive from the Minister of Energy. I was one of the people who helped Ms Van Bommel draft her Private Member's Bill and as such I shared with her my concern with the process and it seems that my concerns were justified.

The Staff Discussion Paper fails to mention to any extent the high frequency problem on farms.

I would like to submit this email and the attached document as my response to the Staff Discussion Paper: Farm Stray Voltage: Issues and Regulatory Options.

Also note that at Trent University we are conducting research on how best to standardize the monitoring of ground current (I don't like to use the term "stray voltage") on farms and in homes. Our method will allow us to determine a standard measure that can be compared on different farms, it will also provide information as to the direction of flow of the 60 Hz and will provide a numerical value for the higher frequencies that we think will correlate with cow health/productivity. It will measure the current through the ground as well as through a variable resistor that can approximate current flowing through a cow. This type of standardization is lacking at the moment.

PLEASE acknowledge receipt of this email and the attachment and please let me know if you require a paper copy as well.

-magda havas

****

Begin forwarded message:
From: Magda Havas <mhavas@trentu.ca>
Date: November 24, 2007 4:37:31 PM EST (CA)
To: stephen.cain@oeb.gov.on.ca
Subject: Stray Voltage

Stephen Cain,

Could you please distribute the attached to the OEB panel on Stray Voltage.

Thank you,
-magda havas

****

Begin forwarded message:
From: Magda Havas <mhavas@trentu.ca>
Date: November 24, 2007 5:27:16 PM EST (CA)
To: "Maria (OMAFRA) Van Bommel" <maria.vanbommel@ontario.ca>
Subject: Fwd: Stray Voltage

This is what I sent to the OEB.

-magda

p.s. I'm quite upset that the OEB hired a consultant who is known to be on side of the utility against farmers when it come to stray voltage. I was worried this would not be a fair process and so far my worries are supported. If anything positive comes out of this it will be a small miracle.

In my opinion the OEB will not consider higher frequencies, which are the primary problem on farms and will set a guideline above 0.5 volts for 60 Hz, which will not help farmers. The key issues, as I see them are as follows:

1. We have an antiquated distribution system that needs upgrading.
2. The utilities connected the neutral wire to earth and hence have contributed to the ground current problem.
3. We are producing poor power quality (electronic devices, wireless technology, etc) and this is getting into the ground and into homes via plumbing.
4. Higher frequencies (kHz and higher) in the ground have a greater effect on livestock and people and need stricter guidelines than 60 Hz frequencies (I'm concerned this panel is not even going to consider anything other than 60 Hz).
5. This energy is affecting not just livestock but wildlife and people (childhood leukemia among other problems) and it is a problem not just in rural Ontario but in urban centres as well.

In my opinion the stray voltage at 60 Hz has to be less than 0.5 volts and at the higher frequencies it has to be less than 10 mV to protect animals and people. We need to measure this in a standard way so that farms in different regions can be compared.

****

Submission #2: Attached Document in pdf consisting of 38 slides. Response to the OEB Panel on Stray Voltage (EB_2007-0709).

see attachment.

****