1/3/2012

From:
Robert and Cathleen Alex
Evergreen Berry Farm
435 Bassett Road
Watertown CT 06795

To:
CT Siting Council
10 Franklin Square
New Britain CT 06051

Re: Docket No. 422 North Atlantic Towers LLC and New Cingular Wireless/AT&T application for a Certificate of Environmental Compatibility and Public Need for the construction and management of a telecommunications facility located at 655 Bassett Road Watertown CT

Dear Chairman Stein and members of the Council,

Earthworms are an integral part of our farming operation. Vermicompost is utilized in our farming operation as a key ingredient to our compost tea that is sprayed on our berry crops. Also, native earthworm populations are a vital component to the soil food web on our farm.
Therefore, please take administrative notice of the following electronic reference to a scientific study regarding earthworms as a bio indicator of negative effects of electromagnetic field exposures:

BOA Bicocca Open Archive: Negative effects on a bioindicator by electromagnetic field exposures alone and in combination with UVC rays

Located online at: http://boa.unimib.it/handle/10281/18976

Authors: SICOLO, MATTEO PAOLO ANDREA (24410)

Internal tutor: SANTAGOSTINO, ANGELA (7512)

Title: Negative effects on a bio indicator by electromagnetic field exposures alone and in combination with UVC rays

Abstract: Genotoxic effects of radiofrequency (RF)/microwave (MW) electromagnetic fields, by using s tandard protocol of single cell gel electrophoresis (SCGE) or comet assay, were investigated in the coelomocytes of the bioindicator Eisenia fetida exposed to both laboratory and field experiments. In particular, laboratory treatments were performed by a TEM microstrip (900MHz – 0.20mW/Kg) to reproduce the characteristics of the waves generated by RF anthropic sources found on field. In order to assess the potential oxidative damage caused by microwave electromagnetic exposure, two base excision repair enzymes, i.e. endonuclase III (Endo III) and formamidopyrimidine DNA glycosylase (FPG) were used in combination with a modified comet assay protocol. In addition, DNA fragmentation of combinative exposure of ultraviolet rays C (UVC) alone and in combination with microwaves was also studied; in order to assess the influence of electromagnetic fields on DNA repair mechanisms of UVC, T4 endonuclease V (T4PDG) enzyme, which specifically induces single-stranded breaks in ultraviolet-irradiated DNA, was used. Finally, a fieldwork was conducted in three electromagnetic hot-spots in the city of Milan, Italy; in addition, a negative

control site with a low electromagnetic field intensity was considered. Loss of DNA integrity was detected by using two main comet assay parameters, i.e. Tail Moment (TM) and Tail Moment Olive (TMO). Data showed

an initial increase in TM and TMO (expressed as differences between Tail Moment or Tail Moment Olive from exposed and respective controls averages) after EMF treatments, resulting the highest after the first minutes of recovery (TM: 6.63±0.70, immediately after exposure and TMO: 4.43±0.38, after 30 minutes, respectively). However, a transient genotoxic damage was observed at 2 hours from exposure ($p<0.01$). The results, after adding EndoIII and FPG, showed higher values of TM after the combinative treatment with the two repair enzymes compared with microwave exposure ($p<0.05$) at all times of recovery. Concerning UVC exposure, we observed the highest value of TM after 1 hour from the exposure (5.94±0.42) and a significant diminish after 2 hours (1.73±0.33). In addition, T4 endonuclease V was able to increase the number of breaks after the exposure to UVC radiation at t0, for the damage was approximately four-fold the level of breaks from ultraviolet radiation alone (TM of 3.42±0.36 and 13.88±1.61, respectively). The combinative effect of UVC and microwave exposure showed significant lower levels of DNA damage than those of corresponding UVC groups at 1 hour of recovery (3.02±0.26 and 5.91±0.54, $p<0.01$ for TM, respectively). However, DNA fragmentation from UVC plus radiofrequency treatments was significantly higher ($p<0.05$) than those of the corresponding UVC groups for the following times of recovery. T4PDG did not affect MW-induced DNA breaks ($p>0.05$); conversely, the action of the repair enzyme was affected by the presence of RF after UV exposure, because TM, after the combinative exposure of the two physical agents, resulted lower than that found by adding T4 Endonuclease V after ultraviolet rays exposure alone ($p<0.05$). Finally, field exposures revealed a significant difference between negative controls and exposed animals in all the hot spots ($p<0.01$); a positive correlation ($p<0.001$, $R2 =0.56$) between electric values and genotoxic parameters was found and no relationship between DNA damage and other environmental parameters, considered under field conditions, was observed

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Sincerely,
Robert and Cathleen Alex

CC:
Paul Jessell, Town Attorney, Slavin Stauffer and Scott LLC, 27 Siemon Company Dr, Watertown CT 06795
Lucia Chicchio Esq. @ Cuddy & Feder LLP, 445 Hamilton Ave., 14th Floor, White Plains, NY 10601