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ORIGINAL

Arizona Corporation Commissioners and staff  
Docket Control  
1200 W. Washington St.  
Phoenix, AZ 85007

2013 JUL -2 P 2:49

AZ CORP COMMISSION  
DOCKET CONTROL

Re: Dr. David Carpenters' Testimony

The Expert preliminary testimony of Dr. Dav  
presented at the Maine Smart Meter Appeal.

Dr. David Carpenter's 29 page Curriculum Vitae can be viewed on  
line follows the information I have here included, as EXHIBIT A.  
A Reference List, EXHIBIT B, on Reported Biological Radiation  
(RFR) at Low-Intensity Exposure Levels (Cell Tower, WI-FI,  
Wireless Laptop, Wireless Utility Meters 'smart meters'); and a  
series of informative charts: Reported Biological Effects from  
Radiofrequency Radiation at Low-In  
can also be viewed on line at the fol  
[http://www.mainecoalitiontostopsm  
content/uploads/2013/01/Exhibit-4](http://www.mainecoalitiontostopsmcontent/uploads/2013/01/Exhibit-4)

A brief description of the "10" Perso  
Public Utilities Commission [PUC], tl  
filed a Notice of Appeal to the Maine  
subsequent events, can be viewed c

[http://www.mainecoalitiontostopsm  
action-to-our-puc-filings-of-expert-i](http://www.mainecoalitiontostopsmaction-to-our-puc-filings-of-expert-i)

**Please Ban Smart Meters Imme**

is created by this monstrous technology! It can only get worse!

Respectfully submitted on behalf of a safe, sane and responsibly  
humane decision by the Arizona Corporation Commissioners.

*Patricia Ferre*

Patricia Ferre  
Arizona Corporation Commission

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JUL -2 2013

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nr

Thank you for  
bringing this  
matter to my  
attention!

*Pat Ferre*



Please add  
pages #14 + #20  
to the eDocket...

Thank you!

*Pat*

Replacement pages →

1 novel neurological syndrome. *Internat J Neurosci* 121: 670-676. In a  
2 female physician who is electrosensitive, blinded application of  
3 electromagnetic fields triggered temporal pain, headache, muscle twitching  
4 and skipped heartbeats within 100 seconds of field application.

5  
6 There are a number of other reports investigating the prevalence of symptoms in  
7 areas near to sources and/or other measures of human response to electromagnetic  
8 fields. There are many publications on this subject, and the following are  
9 representative of both positive and negative studies:

10  
11 a. Hietanen M, Hamalainen A-M, Husman T. 2002. Hypersensitivity  
12 symptoms associated with exposure to cellular telephones: No causal link.  
13 *Bioelectromagnetics* 23: 264-270. Studied 20 volunteers who reported  
14 themselves to be electrosensitive and exposed them to fields in a blinded  
15 manner. "None of the test subjects could distinguish real RF exposure from  
16 sham exposures."

17  
18 b. Abelin T, Altpeter E, Rösli M. 2005. Sleep disturbances in the  
19 vicinity of the short-wave broadcast transmitter Schwarzenburg.  
20 *Somnologie* 9:203-209. There is strong evidence of a causal relationship  
21 between operation of a short-wave radio transmitter and sleep disturbances  
22 in the surrounding population.

23  
24 c. Hutter HP, Moshhammer H, Wallner P, Kundi M. 2006. Subjective  
25 symptoms, sleeping problems, and cognitive performance in subjects living  
26 near mobile phone base stations. *Occup Environ Med* 63:307-313. There  
27 was a significant relation of some symptoms, especially headaches, to  
28 measured power density, as well as effects on wellbeing and performance.

29  
30 d. Eliyahu I, Luria R, Hareuveny R, Margaliot M, Neiran N, Shani G.  
31 2006. Effects of radiofrequency radiation emitted by cellular telephones on  
32 the cognitive functions of humans. *Bioelectromagnetics* 27:119-266. A  
33 total of 36 human subjects were exposed to pulse-modulated microwaves  
34 and were tested on four distinct cognitive tasks. Exposure to the left side of  
35 the brain slows left-hand response time in three of the four tasks.

36  
37 e. Altpeter ES, Rösli M, Battaglia M, Pfluger D, Minder CE, Abelin  
38 T. 2006. Effect of short-wave magnetic fields on sleep quality and  
39 melatonin cycle in humans: The Schwarzenburg shut-down study.

1 results are consistent with other publications (see Agarwal et al., 2008. *Fert*  
2 *Steril* 89:124-128) that reported that those who use cell phone regularly  
3 have reduced sperm count.  
4

5 Other evidence of fertility and reproductive effects of low-level RF exposure is  
6 discussed in Section 18 of the *Bioinitiative Report 2012*.

7 Q. Is there evidence that some people may become hyper-sensitive to low-level RF  
8 and experience related adverse health effects?

9 Electrical hypersensitivity (EHS) is a syndrome of relatively non-specific  
10 complaints that are reported to be associated with exposure to electromagnetic  
11 fields. The major symptoms are headache, fatigue, tinnitus, disruption of sleep,  
12 mental dullness and a general feeling of ill health. Whether or not EHS exists has  
13 been widely debated. In spite of widespread reports that up to 10% of the  
14 population may suffer from EHS, most studies in laboratories with blinded  
15 exposures (ie., the subjects do not know whether or not the fields are applied) have  
16 not demonstrated that persons reporting to be electrosensitive can correctly  
17 distinguish when the fields are on. However, there is increasing evidence that  
18 EHS does exist and can be a disabling condition for some particularly sensitive  
19 persons, although evidence to date is certainly incomplete.

20 There has been only one report of a completely blinded study of an  
21 electrosensitive individual that has documented the ability of this individual to  
22 report symptoms (primarily headache) in the presence of an electromagnetic field:

23  
24 a. McCarty DE, Carrubba S, Chesson AL, Frilor C, Gonzalez-Toledo  
25 E, Marino AA. 2011. Electromagnetic hypersensitivity: Evidence for a

1 Systematic increases in rates for cancer of the temporal lobe in men... and  
2 women... were observed, along with decreases in the rates of cancer of the  
3 parietal lobe... and cerebellum...”

4  
5 d. Little MP, Curtis RE, Devesa SS, Inskip PD, et al. 2012. Mobile  
6 phone use and glioma risk: comparison of epidemiological study results  
7 with incidence trends in the United States. *BMJ* 344: e1147 doi:  
8 10.1136/bmj.e1147. “Raised risks of glioma with mobile phone use, as  
9 reported by one (Swedish) study forming the basis of the IARC’s re-  
10 evaluation of mobile phone exposure, are not consistent with observed  
11 incidence trends in US population data, although US data could be  
12 consistent with the modest excess risks in the Interphone study.”

13  
14 e. Dobes M, Shadbolt B, Khurana VG, Jain S, et al. 2011. A  
15 multicenter study of primary brain tumor incidence in Australia (2009-  
16 2008). *Neuro-Oncol* 13: 783-790. The authors observed an increased  
17 increase in malignant primary brain tumors over the period 2000-2008, but  
18 cannot determine whether it was due to improved detection, diagnosis or to  
19 a true elevated incidence.

20  
21 f. Deltour I, Auviene A, Feychting M, Johansen C, et al. 2012. Mobile  
22 phone use and incidence of glioma in the Nordic countries 1979-2008.  
23 *Epidemiology* 23:301-307. “No clear trend change in glioma incidence  
24 rates was observed. Several of the risk increases seen in case-control  
25 studies appear to be incompatible with the observed lack of incidence rate  
26 increase in middle-aged men. This suggests longer induction periods than  
27 currently investigated, lower risks than reported from some case-control  
28 studies, or the absence of any association.”

29  
30 g. The Danish Cancer Society recently reported that the number of men  
31 who are diagnosed with the most malignant form of brain cancer  
32 (glioblastoma) has almost doubled over the past ten years.  
33 ([http://www.cancer.dk/Nyheder/nyhedsartikler/2012kv4/Kraftig+stigning+i](http://www.cancer.dk/Nyheder/nyhedsartikler/2012kv4/Kraftig+stigning+i+hjernesvulster.htm)  
34 [+hjernesvulster.htm](http://www.cancer.dk/Nyheder/nyhedsartikler/2012kv4/Kraftig+stigning+i+hjernesvulster.htm))

35  
36 Further discussion of the relevance of brain cancer rates to the debate about the  
37 association between cell phone and RF exposure to cancer is found in Section 11  
38 of the *Bioinitiative Report, 2012*.

1 Q. In addition to the foregoing evidence of the effects of low-level RF on humans, is  
2 there additional evidence from studies of animals and isolated cells?

3 A. Some, but not all studies of isolated cells and intact animals have shown that  
4 RF/MW exposures may cause changes in cell membrane function, cell  
5 communication, metabolism, activation of proto-oncogenes, and can trigger the  
6 production of stress proteins at exposure levels below the above FCC and Health  
7 Canada guidelines. Resulting effects in cellular studies include DNA breaks and  
8 chromosome aberrations, cell death including death of brain neurons, increased  
9 free radical production, activation of the endogenous opioid system, cell stress and  
10 premature aging. Additional studies show neurologic, immune, endocrine,  
11 reproductive and cardiac, adverse health effects from low-dose, chronic exposure  
12 to RF/MW radiation in humans. These studies will not be presented here because  
13 there are too many and their relevance to human health is uncertain. Please see  
14 Bioinitiative Report. 2012 for a comprehensive review of these studies. In  
15 summary they do provide additional evidence of biological effects and evidence  
16 for possible mechanisms whereby radiofrequency fields may cause adverse health  
17 effects including cancer, reproductive and neurobehavioral effects through  
18 generation of reactive oxygen species, gene induction and alteration of ion fluxes,  
19 but not all positive observations have been fully replicated.

20 Q. **Are there any safety standards or guidelines governing RF devices in the**  
21 **United States that are designed to protect people from non-thermal effects of**  
22 **RF exposure?**