0000158211

Warren Woodward
55 Ross Circle
Sedona, Arizona 86336
928 204 6434

ORIGINAL

November 20, 2014

Arizona Corporation Commission (ACC)
Docket Control Center
1200 West Washington Street
Phoenix, Arizona 85007

Arizona Corporation Commission
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Re: Docket # E-00000C-11-0328

Commissioners;

Here is my report on the Arizona Department of Health Services' "smart" meter study. Read it and weep.

Since the ADHS did not find wireless "smart" meters safe, when will wireless "smart" meters be removed from Arizona? With every day that goes by, you are now violating the law.

Additionally, there is no longer any point to APS's request for extortion money from ratepayers not wishing to be harmed by "smart" meters.

Game over.

Sincerely,

Warren Woodward

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A Pattern of Incompetence and Fraud

Exposing Major Mistakes, Misleading Misrepresentations, and Obvious Omissions in the Arizona Department of Health Services' "Smart" Meter Health Study

Information and Perspective by Warren Woodward
Sedona, Arizona ~ November 2014

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Full Disclosure: No one is paying me anything to research this issue and ferret out the truth. I received no "dark money". In fact, my work has cost me much of my own money in time and expenses.

Foreword

The title of this report, *A Pattern of Incompetence and Fraud*, was not chosen for affect.

This evaluation of the "smart" meter health study that the Arizona Corporation Commission (ACC) requested of the Office of Environmental Health at the Arizona Department of Health Services (ADHS), will show in detail the multitude of major mistakes, misleading misrepresentations and obvious omissions that comprise the ADHS study. (The ADHS study, *Public Health Evaluation of Radio Frequency Exposure from Electronic Meters,* may be read in its entirety at the ACC docket, here: http://images.edocket.azcc.gov/docketpdf/0000157691.pdf.)

A lover of brevity, I apologize for the length of this report, but the instances of data cherry picking and misrepresentations of scientific studies are too numerous. The spinning and equivocation is endless, the repetition of misinformation seemingly constant. And there are too many examples of ADHS omitting relevant and key material from the scientific works they review.

Then of course there are the simple, basic things that ADHS got completely wrong. As you read, remember that ADHS spent over a year on their study. They had time to get it right but they did not.

As I go through the ADHS study in the order it was written, section by section and sometimes line by line, you will see that an unmistakable pattern emerges, one of incompetence and fraud. The mistakes happen so often that they reflect incompetence, and instances where ADHS misleads occur so often that they amount to willful deception.

In addition to other information, I use the actual articles and studies that ADHS referenced to demonstrate and prove my points. I show what ADHS reported and then what was really said.

The ADHS study is a fraud on the public. Read along with me and you'll see that I am not exaggerating.

Introduction – setting goals but not meeting them

The "Introduction" portion of the ADHS study is fairly uneventful, just standard introductory stuff.

It's worth noting the goals they set forth so you can see later that they failed to meet them.

> "The goals of this report are 1) to determine whether RF exposure from electronic meters on residences, including single family homes and apartment complexes are within the FCC standards or are at levels to cause public health concern; and 2) to determine whether the current body of peer-reviewed literature has found an association between RF exposure from low level RF exposure and adverse health effects."

Notice that an actual investigation of people made ill by "smart" meters was not a goal. That is a major failing and will be discussed in more detail later.

Notice that goal number 2 entails an investigation into peer-reviewed literature. Do you see any goal listed that calls for listing and promoting non-peer-reviewed studies? I don't, yet ADHS saw fit to include six of them from four different states.

ADHS wrote: "ADHS reviewed available peer-reviewed literature to summarize potential health effects from radio frequency exposure, including exposure from electronic meters."

No, ADHS reviewed *some* peer-reviewed literature.

Background – the bamboozle begins

After a primer on electromagnetic fields and radiofrequency [RF] radiation, ADHS tips their hand by inserting this gratuitous bit of industry propaganda: "Electronic meters give utilities a means to match energy consumption with energy generation, and allow consumers to better manage their energy use."

What the heck is that sentence doing in a health report? It sounds like something out of an electric company's bill insert. Not only that but the statement is false.

1. "Electronic meters give utilities a means to match energy consumption with energy generation ...." —> That has been proved wrong by Northeast, Massachusetts' largest electric utility (discussed by me later).

2. "Electronic meters ... allow consumers to better manage their energy use." —> Complete nonsense. Nobody needs a "smart" meter to know when the lights are on. And if for some reason they do, there are energy monitors they can buy that start at $16.

ADHS continues, now with a half truth that is more industry propaganda:

> "Advanced Metering Infrastructure (AMI) meters are devices capable of two-way communication, and use RF frequencies for communication purposes. AMI meters send usage data to the electric company, and the electric companies can communicate with the meter, for example, starting and stopping service remotely."

What is always left unsaid is that wireless "smart" meters also move other people's data, not just yours. Essentially, utilities are taking your property to use for their own communications network. They have put a radio transceiver and relay antenna at your place and not compensated you for it. What if ATT or Verizon did that?

ADHS briefly mentions Power Line Communication (PLC). PLC is another, different method of "smart" meter communication whereby data is sent via existing power lines, not by microwaves.

In what will not be the first time in their study that ADHS shows a complete lack of subject matter knowledge, Table 1 on page 2 of the ADHS study has the PLC frequency listed as 57 – 63 hertz.

The PLC system does *not* transmit at 57 to 63 hertz.

I called the Trico Electric Cooperative in whose territory the Arizona Radiation Regulatory Agency (ARRA) measured for the ADHS study, and I spoke with a technical expert there. Steve Martinez told me Trico uses frequency in the range of 910 to 1122 hertz for its PLC.

ADHS is off by a mile.

Think about that. ADHS had a over a year to get their study right but they got this very basic information completely wrong – information that I was able to get completely right in a very short phone call. How can the rest of what ADHS says have any credibility? What else did they flub? Keep reading; you'll see they flubbed a great deal – and what they didn't flub they misrepresented.

And speaking of misrepresentation, we are now at a point in the ADHS study where the bamboozle of distracting, false comparisons begins.

The electromagnetic spectrum is reproduced on page 3 of the study, and ADHS points out that radio frequency can come "... from natural sources (e.g. the sun) or from man-made sources (e.g. radios)." The study goes on to say, "Some common household items use RF and are regulated by the FCC." To illustrate this point there are pictures of a radio, "smart" meter, microwave oven, television, cell phone and WiFi router, and those are grouped as "Common Household RF Sources".

Comparison with these items is the hallmark of "smart" meter boosters and apologists. A truly objective study of "smart" meter health effects would not include it.

The comparison is designed to create the impression that the "smart" meter is benign. In their propaganda, utilities also use the familiarity of these other items to imply that one more (which happens to be theirs, the "smart" meter) is therefore OK. However, lumping these various items together amounts to an apples and oranges false comparison in several ways.

The items listed – radios, microwave ovens, televisions, cell phones and WiFi routers – are all items one can choose or not choose. For example, by conscious choice I have never owned a microwave oven in my life, and we do not use WiFi in our house but wire our computers instead. I seldom listen to the radio and, when I do, our radio, unlike a "smart" meter, only receives; it does not transmit. Our television does not transmit either. ADHS is completely wrong in listing radios and TVs as "Common Household RF Sources".

Also, if chosen, an individual can limit their usage of the items shown in the ADHS study. For example, I do own a cell phone but my use is so restricted that I do not even know its number. The phone is turned off and kept in my vehicle for emergency purposes. Individuals cannot limit usage of a "smart" meter.

Exposure to "smart" meter radiation is beyond the control of the individual and, in fact, chronic – 24/7/365. Even the sun (which necessitated the invention of the hat for shielding) gives us a break for roughly half the day. The "smart" meter never quits.

Additionally, no one has to pay to "opt out" of the sun. And no one has to pay to "opt out" of a radio, cell phone, TV, microwave, or WiFi router.

False and misleading comparisons continue and abound on page 4 where the ADHS study discusses radio frequency power density, distance from radiation signal, and duration of signal.

From the ADHS: "For example, cell phones and microwave ovens emit radiation at higher power densities than Wi-Fi routers, radios, and smart meters."

Obviously a microwave oven is intentionally heating food but it is not intentional that one be exposed to that radiation which is very high in the oven. Industry typically quotes allowed leakage rates for an oven compared with smart meters. However, the actual typical peak RF from a microwave oven is about 10 microwatts per centimeter squared at one meter away, not much different than a "smart" meter.

As for the cell phone comparison, some cell phones when operating at peak level can produce a signal higher than a smart meter but most operate much lower than a smart meter due to adaptive power control and other measures intended to conserve battery power. No such conservation measures are employed for "smart" meters.

Also, exposure to "smart" meter radiation is whole body exposure whereas exposure to cell phone radiation is generally at the head only. And again, exposure to the devices other than "smart" meters is voluntary and intermittent, not chronic and involuntary as with "smart" meters.

Once again, the ADHS study's authors demonstrate their nearly complete ignorance of the subject by listing radios as RF emitters. Radios are RF receivers. They do not emit RF (unless of course they are a HAM radio).

We encounter an additional faulty comparison in the ADHS example given for distance from a radiation signal:

> "RF exposure decreases rapidly with distance. For the example of microwave ovens, a person 50 cm from a microwave oven receives about l/l00th of the microwave exposure of a person 5 cm away. (WHO 2005)"

Who stands 5 cm (2 inches) from a microwave oven?

With distance, RF does fall off quickly from a source. But a more reasonable, less biased comparison would be standing 3 feet and then moving to 10 feet away from a microwave oven. In that case the RF level *does* drop off, but to about 1/10th the initial value, not 1/100th.

Regarding duration of signal, the study states that "Americans spend on average nearly 3 hours per day on their mobile device per day. (Geekwire 2014) In contrast, smart meters in Arizona typically emit RF less than ½ hour in total during the day."

Several things are wrong with that.

First of all, the Geekwire article is not about how long people spend talking on their cell phones, but rather how long they spend on their "smart" mobile devices while web browsing and using apps.

(http://www.geekwire.com/2014/flurry-report-mobile-phones-162-minutes/)

As if those 3 hours Geekwire mentioned were all phone calls, ADHS has apparently assumed a 100% duty cycle for those 3 hours. In actual fact, it is not really knowable how much of that time involves the transmission of microwaves from the device because, in many of the app/web browsing type uses, the device is primarily receiving incoming data with only intermittent outgoing transmissions to maintain a connection.

In other words, despite ADHS's effort to do so, a definite duty cycle cannot be ascribed to the activity described in the Geekwire article. ADHS has made another meaningless and false comparison.

If anything, the ADHS study should be addressing *why* people who spend "nearly 3 hours per day on their mobile device" are getting sick after chronic exposure to "smart" meter radiation when they weren't getting sick before, especially if that additional radiation totals "less than ½ hour" per day.

The answer would be that "less than ½ hour total during the day" is more like non-stop-all-day when the transmissions are just fractions of seconds in duration. In other words, split second transmissions might add up to less than ½ an hour but, because they are split second transmissions, there are thousands of them continuously during the day and night.

You can see this basically non-stop "smart" meter transmission in my youtube videos **APS Caught Lying Again** and **Navopache Caught Lying**. Can anyone watch those videos and then think that comparison with cell phone use is fair comparison? Has the Dept. of Health Services never heard of the Death of One Thousand Cuts? It's clear from ADHS's false comparison that they do not understand chronic exposure and, in not understanding, did not bother to address or examine it.

By the way, both those videos were sent to ADHS while they were in the process of writing their study, so in my opinion they have no excuses for bungling this important point.

While APS and Navopache Electric continue to lie about the number of their SM transmissions per day (giving ridiculous, low-ball numbers of 125 and 6 respectively), utilities that have been forced to come clean have admitted vastly different numbers – PG&E as many as 190,000 times per day and Sacramento Municipal Utility District (SMUD) as many as 240,396 per day (more than 166 times per minute).

Also, the ADHS statement that "smart meters in Arizona typically emit RF less than ½ hour in total during the day" may not be correct.

Let's say the meters transmit for 1/10 of a second each time. 28 minutes of total transmissions would equal 16,800 transmissions per day. In **APS Caught Lying Again** you can see me measuring a meter I estimate to be transmitting 50,880 times per day. That would total about 1 hour and 20 minutes per day. I'll let you do the math for the far greater PG&E and SMUD numbers.

Lumped in with the study's misleading discussion of radio frequency power density, distance from radiation signal, and duration of signal, is this curious non sequitur: "**RF from the Sun:** Humans can also receive RF radiation from the sun. However, this radiation is at a different frequency from radio waves and microwaves."

As I wrote previously, people have known for thousands of years to shield themselves from the sun's radiation, and the sun is one reason why hats were invented. But how many people know to shield themselves from the radiation of 'smart" meters? Additionally, almost anyone can afford a $10 sun hat but shielding a home from microwaves costs thousands. And personal shielding outside of the home is almost impossible if one wants to live a normal life.

The sun's radiation quits for roughly ½ the day; "smart" meters do not. The sun's rays actually promote life; the "smart" meters' do not. Why is solar radiation even mentioned if not to associate some kind of general beneficence to radiation in the reader's mind? What the heck does solar radiation have to do with the health effects of "smart" meters?

Discussing some "potential health effects from radio frequency" the ADHS study says,

> "This reported sensitivity to EMF has been generally termed "electromagnetic hypersensitivity" or EHS. A survey of occupational medical centers estimated the prevalence of EHS to be a few individuals per million in the population (WHO 2005)."

Actually, the "reported sensitivity to EMF" was named by a German doctor as far back as 1932, and was then more accurately called radio wave sickness.

It is always important to call things what they really are. "Electromagnetic hypersensitivity" connotes that it is the victim's fault for being "hypersensitive" (read "weak"), and not industry's fault for poisoning them.

Also, since exposure to EMF continues to increase exponentially, it is a safe bet that the nine year old survey referenced by ADHS is well out of date. It is also likely that the survey is grossly inaccurate since many doctors are ignorant of the symptoms of radio wave sickness and so misdiagnose and mis-medicate. Indeed, many people have cured their own radio wave sickness, in spite of their doctor's misdiagnosis, by removal of the offending EMF sources, the "smart" meter being one of the major culprits.

Radio Frequency Regulations and Literature – The English Muffin Syndrome

In its discussion of "Radio Frequency Regulations and Literature", ADHS states, "The Federal Communications Commission (FCC) is an independent agency of the United States government that regulates interstate communications by radio, television, wire, satellite, and cable in the US."

What is not mentioned is that the FCC has a huge regulatory conflict of interest in that it sells frequency bandwidth and is currently chaired by a former communications industry lobbyist. This fox/hen house scenario is just one reason the FCC "guidelines" are dangerously lax and out of date (they date to 1996).

The FCC guidelines only involve protection against thermal radiation – when human tissue is heated. British physicist Cyril M. Smith, co-author of the best-seller *Electromagnetic Man*, dubbed this inadequate standard the English Muffin Syndrome – *If it's not burnt, it's all right.*

Additionally, FCC guidelines were based on a test population of average weight males. What about sensitive populations such as children and pregnant women?

Sadly – and negligently – FCC exposure guidelines do not cover non-thermal, low intensity radiation generated by "smart" meters and other wireless devices at the lower end of the microwave range. The FCC exposure guidelines are thus completely inapplicable for the microwave radiation emitted by "smart" meters.

Here are two comprehensive explanations of what I have just stated. Both are written for the layperson.

> *Serious Flaws with the FCC RF/MW Safety Guidelines*
> http://www.emrpolicy.org/faq/fcc_flaws.pdf
>
> *A Primer on FCC Guidelines for the Smart Meter Age*
> http://stopsmartmeters.org/2012/03/09/a-primer-on-the-fcc-guidelines-for-the-smart-meter-age/#skipmath

And here is a report that goes into more scientific detail:

> *Assessment of Radiofrequency Microwave Radiation Emissions from Smart Meters*
> http://sagereports.com/smart-meter-rf/

There are of course other independent reports for anyone who cares to look.

Here is one more thing about the FCC parameters which is quite interesting. For years during the Cold War the Russians bombarded the U.S. embassy in Moscow with microwave radiation, and many of the embassy workers got cancer, more than what would be normal. The bombardment was within the FCC guidelines.

> The clandestine activation of what became called the "Moscow Signal" would mark the beginning of a twenty-three year undetectable assault on the diplomatic staff of more than 1800 representing the US State Department. According to the famous Lilienfeld Report, the embassy staff would be bathing in a constant field of radio waves for about fifty hours per week that measured between 20 and 100 microwatts. These are levels well within the US safety standards today.
>
> It would be another dozen years before the US Government uncovered this covert operation and not until 1976 before the US Embassy staff would finally be informed. But it would be too late for the three ambassadors, who had served in Moscow. All three died of cancer, two of adult leukemia, which is strongly environmentally-linked. It would be too late for the hundreds of other embassy employees, who fell to a variety of cancers, including breast, prostate, brain, lymphoma and leukemia reaching the alarming rate of eight times the expected mortality rate! It would be too late for more than half the staff who suffered chromosome damage from the menacing rays.
>
> ~ Ann Louise, *Accidental Conspiracy* http://www.annlouise.com/articles/338

For a visual graphic on just how inadequate the FCC guidelines are for protecting human health, search YouTube for **Take Back Your Power - Smart Meter Radiation** and watch the 2 & ¾ minute video. (https://www.youtube.com/watch?v=64SIGJnAGeU)

ADHS provides a table of RF exposure limits derived from the very important sounding International Commission on Non-Ionizing Radiation Protection (ICNIRP) and the Institute of Electrical and Electronics Engineers, Inc. (IEEE).

IEEE is an industry promotional organization. Indeed, at their website they describe themselves as "The world's largest professional association for the advancement of technology".

Just because IEEE engineers can measure microwave radiation and tissue temperature with great precision, why is it assumed they know anything at all about the physiology to which they have applied those measurements to create their standards? I would prefer that radiation exposure limits come from an organization more focused on the advancement of health instead of the advancement of technology.

Unfortunately, IEEE is not without scandals. They have lent their name to fake conferences that exist to bilk unwitting participants. Just do an internet search for "fake IEEE conferences".

To further increase revenue, IEEE accepts papers at conferences but there is no real peer review process. Earlier this year the journal, *Nature*, described how IEEE published over 100 papers that were computer generated gibberish "to prove that conferences would accept meaningless papers." (http://www.nature.com/news/publishers-withdraw-more-than-120-gibberish-papers-1.14763)

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has a report used by many "smart" meter cheerleaders and apologists. In *Exposure to High Frequency Electromagnetic Fields, Biological Effects and Health Consequences*, ICNIRP states,

> "Results of epidemiological studies to date give no consistent or convincing evidence of a causal relation between RF exposure and any adverse health effect. On the other hand, these studies have too many deficiencies to rule out an association."

You've got to love that as a perfect example of equivocation. There is "no consistent or convincing evidence" but at the same time we can't rule it out. Thank goodness people have only two sides of their mouths otherwise they might have thrown in a third diametrically opposed conclusion.

The people who authored ICNIRP's EMF exposure guidelines were unqualified for that task. One-sided, they rejected peer-reviewed studies that showed DNA damage at low exposure levels. You can read about it in this short article, *ICNIRP Guidelines on Genotoxicity,* here: http://microwavenews.com/short-takes-archive/icnirp-guidelines-genotoxicity .

At their website, ICNIRP portrays itself as independent of industry yet according to the Microwave News "A number of industry consultants advise ICNIRP – Leeka Kheifets and David Black come right to mind." (http://microwavenews.com/short-takes-archive/icnirp-elections-matthes-feychting-are-new-leaders)

By the way, scientist-for-hire Leeka Kheifets was at APS's side at the first Arizona Corporation Commission "smart" meter meeting in September of 2011. She gave a power point presentation largely based on the biased and discredited CCST report (which will be discussed later since ADHS made the mistake of including it in their study).

So ask yourself, would you trust your health, your life, to ICNIRP or IEEE? I know I wouldn't. Reminds me too much of "9 out 10 doctors smoke Camels." When money's involved, many people will do or say anything. Or as Dr. John put it so well in *Babylon*, "This is not the land of milk and honey. This is the place where people sell their souls out for money. And you know they do."

ADHS faithfully parroted the ICNIRP, IEEE, FCC line when they wrote the following about "time-averaging". Sadly, ADHS did not have the wits to realize how preposterous a concept it is, how this major flaw condemns the FCC guidelines to absolute irrelevance regarding health effects:

> "The time-averaging concept can be used to determine the levels of exposure. This means that it is acceptable to exceed the recommended limits for short periods of time as long as the average exposure does not exceed the limit."

Actually, what that means is that they are averaging power density over time to make that power seem OK. It's a way to level off peaks in transmission, to make those peaks disappear.

Think about this: If I hit you with a hammer will it feel better if we "time-average" that blow? Would you like to try that? I can show you on paper how, when averaged out over time, you'll hardly feel anything.

On page 5 of their study, ADHS attempts to dismiss non-thermal radiation effects with a 5 sentence statement from the industry agenda driven and discredited IEEE. In so many words, IEEE claims they are aware of non-thermal effects of microwave radiation but those effects are "insufficient to be considered a health hazard". It has already been established that this "professional association for the advancement of technology" is sloppy and money-driven. Why should we assume this time is different, especially when there are plenty of studies that do in fact show non-thermal effects.

There is a table on page 6 of the ADHS study that shows microwave radiation exposure limits in use in the U.S., Canada, Australia, New Zealand, and Russia. ICNIRP and IEEE limits are listed as well. ADHS says that all those countries but Russia base their standards on ICNIRP. Is it any surprise then, that independent Russia – which is outside the corrupting influence of ICNIRP – would have a more stringent standard?

For a full discussion of the corruption of science involved in countries that rely on ICNIRP, read this dissertation by Don Maisch, PhD: *The Procrustean Approach – Setting Exposure Standards for Telecommunications Frequency Electromagnetic Radiation. An examination of the manipulation of telecommunications standards by political, military, and industrial vested interests at the expense of public health protection.* (http://www.emfacts.com/papers/)

State Studies – What are they doing here?

On pages 7 to 10 of the ADHS study we are treated to a review of "smart" meter studies from

California, Texas, Maine and Vermont. None of the studies are peer-reviewed.

Recall that in its introduction to this study, ADHS gave as one of its 2 goals:

> "... 2) to determine whether the current body of **peer-reviewed literature** has found an association between RF exposure from low level RF exposure and adverse health effects."

Since ADHS gave as their goal a review of peer-reviewed literature, one wonders then, what this *non*-peer-reviewed literature is doing in ADHS's study, especially since those six studies have all been thoroughly debunked as little more than misinformation and industry propaganda.

Even without a background in science and without knowing anything about the California Council on Science and Technology (CCST), it is easy for anyone capable of critical thought to see that the CCST study is a propaganda piece. The document is supposedly about the health aspects of smart meters. Yet several times, after just a few pages in, one finds the prose peppered with propaganda about how the meters will make the grid "clean", "efficient", "reliable", "safe" and etc.

First of all, Massachusetts' largest utility, Northeast, has proved that "*An Advance Metering System is not a "basic technology platform" for grid modernization and is not needed to realize "all of the benefits of grid modernization."*"" [italics in original] Anyone can read their full report along with my letter about same at the ACC docket here: http://images.edocket.azcc.gov/docketpdf/0000151238.pdf .

Secondly and more importantly, unless for propaganda purposes, why are the alleged benefits of "smart" meters even mentioned in a study that is supposed to be about "smart' meter microwave radiation health issues?

The CCST report is not primary research. Its conclusions are based on cherry picked information. It has every appearance of "science" for a preconceived outcome because contributors to the report whose findings did not support that preconceived outcome – that "smart" meters pose no public health problems – had their solicited submissions removed but they were still listed as contributors!

Here is what rejected contributor Dr. Magda Havas had to say about the CCST and their report:

> January 17, 2011. The California Council on Science and Technology (CCST) released their report on Smart meters "Health Impacts of Radio Frequency from Smart Meters". Click here to download this document.
>
> CCST invited me to submit a written report as part of a *Technical Response Team* in October 2010. Note: CCST did not offer, and I did not request, payment for my report.
>
> In December I was informed that neither my report nor any of the others would be appended to the final document nor would they be made available to anyone.
>
> My submission does not support the final conclusions in the CCST report and I provide it here for anyone interested. For a pdf copy click here.

The CCST is so intellectually dishonest that they still listed Dr. Havas as a contributor to their report even though they rejected her findings. You can see her name listed on page 36 of the CCST report linked above.

Also on page 36 you'll see the names of two others who had their findings rejected but were still listed as contributors – Dr. De-Kun Li, MD, PhD Senior Reproductive and Perinatal Epidemiologist at the Kaiser Foundation Research Institute, and Cindy Sage, MA, Department of Oncology, University Hospital, Orebro, Sweden.

Outcast Dr. Raymond Richard Neutra, MD, CM, MPH, Dr. PH, former Director of the California EMF Program, can be found listed as a contributor on page 44 of the CCST report. And the rejected California Department of Public Health is listed on page 37.

It's always important to "follow the money" and on page 1 of the CCST's 2012 annual report they brag that "CCST also has strong connections to industry through its membership." (http://www.ccst.us/annualreport/2011-12/2011-12AR.pdf)

The CCST also has strong connections to the U.S. Department of Energy (USDOE), the same U.S. Department of Energy that subsidized the "smart" grid to the tune of 4 billion dollars. (https://gigaom.com/2009/11/24/smart-grid-stimulus-demo-award-winners-unveiled/)

Again on the same page of the CCST's 2012 report, the CCST lists Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, and SLAC National Accelerator Laboratory as "Sustaining Institutions". These labs are USDOE labs and so are funded by USDOE. It's a mutual admiration (and funding) society.

The next state study referenced by ADHS, the Public Utility Commission of Texas' (PUCT) "Report on Health and Radiofrequency Electromagnetic Fields from Advanced Meters" was directly funded by the U.S. Department of Energy. On page ii of the PUCT report it says, "This document is work supported by the Department of Energy under award numbers DE-OE0000092 and DE-OE0000180." (http://www.puc.texas.gov/industry/electric/reports/smartmeter/SmartMeter_RF_EMF_Health_12-14-2012.pdf)

Those two grants totaled millions. Does anyone think that the "smart" grid's sugar daddy, USDOE, would fund a report if it thought the report would conclude that "smart" meters made people sick?

By the way, number 1 on PUCT's list of sources is none other than the CCST study. All these pro-"smart" meter studies reference one another as in a mutual admiration society, and repeat each others' lies and misinformation. Unfortunately, now ADHS is another link in the chain of fraud.

Something else all these sorts of studies and reports have in common is that none were done before the installation of "smart" meters. They were all done as after-the-fact damage control. People got sick and complained, so industry and government funded studies to avoid liability, to tell people there's nothing to worry about, and to tell people made sick by the meters that it's all in their heads.

Alan Rivaldo, the PUCT report's author, confessed in his cover letter to the report that "Staff relied heavily" on CCST, Lawrence Berkeley National Laboratory and the Electrical Power Research Institute to reach their conclusions.

The Electric Power Research Institute (EPRI) is an industry advocacy group. EPRI actually call themselves an "industry collaborative", and they have a very long list of member utilities. At their website, EPRI boasts that members "pool their resources to fund research", and that "While most members are electric utilities, many are firms, government agencies, corporations, or public or private entities engaged in some aspect of the generation, delivery or use of electricity."

Given the above, does anyone think that EPRI is qualified to weigh in on a health debate? Does anyone think EPRI would be offering objective, impartial opinions on anything?

As I mentioned before, Lawrence Berkeley National Laboratory (LBNL) is a USDOE lab and full fledged "smart grid" cheerleader. I've seen their papers and power points on the subject. They love the "smart" meters they are paid to love and are not impartial.

With these three then – CCST, EPRI, and LBNL – as the sources that the PUCT staff "relied heavily on", does anyone think the PUCT report would be objective?

If you answered NO you answered correctly because it was not objective.

In testimony to the Massachusetts Department of Public Utilities, telecommunications standards expert Dr. Don Maisch summed up the PUCT report thus:

> "The report, written for the Public Utilities Commission of Texas (PUCT), was prepared by Alan Rivaldo, a Cyber Security Analyst at PUCT. Titled **Health and RF EMF from Advanced Meters** the report takes the extreme view that a scientific consensus has been reached within the body of scientific evidence for RF, and people who do not understand this are suffering from misconceptions based on faulty assumptions. This supposed consensus according to Rivaldo is that there are no known non-thermal effects from exposure to RF. He asserts that reports of EHS are unrelated to RF exposure but may be due to psychiatric conditions or stress from worry, going on to say that 'scientific studies show that people who are ill are highly receptive to negative suggestions and may demonstrate a nocebo response as a result of these suggestions'. The overall impression given by the report is that the 'weight of scientific evidence', as presented by organizations such as the IEEE, ICNIRP, the FCC and others, is a body of credible research which is above serious reproach. Any claims otherwise come from notorious, biased researchers who lack scientific rigor. In what is unusual for a supposedly scientific document, the report resorts to making personal attacks on a number of people. While serving up a diatribe against anyone claiming that non-thermal effects exist, especially about smart meters, the author altogether overlooks the significant industry biases and level of scientific uncertainty that exists in the RF controversy, relying exclusively on industry sources for his claims. As such, the PUCT report reads more like the writings of a product defence PR company than a scientific review, which it is not." [Maisch's full testimony is here:

http://skyvisionsolutions.files.wordpress.com/2014/05/maisch-submittal-to-the-ma-dpu-on-electric-grid-modernization.pdf]

ADHS boils down the PUCT report to 3 main points. Lifted straight from the PUCT report's executive summary, point number 1 is that:

> "Decades of scientific research have not provided any proven or unambiguous biological effects from exposure to low-level radio frequency signals. All available material was reviewed, and **no credible evidence** to suggest that smart meters emit harmful amount of EMF radiation was found."

That's important and authoritative sounding but is really total nonsense.

It is always essential to pay attention to the actual words used. "No credible evidence" begs the question, *credible to whom?*

It's not overly surprising that mountains of evidence of biological effects would not be "credible" to author Rivaldo since he has no technical expertise in the subject of health. He was a former Xerox employee and calls himself a cyber-security analyst.

"No credible evidence" is a phrase common to "smart" meter cheerleaders. Here are some other commonly used wiggle words to be on the lookout for when reading studies such as the ones listed by ADHS – and when reading ADHS's own study as well. Dr. Magda Havas says, "These are words used to mislead, downplay, divert from the real meaning intended in scientific studies." And here is her list of wiggle words [red and italics and bold in original]:

1. ***authoritative*** *reviews*: groups who think like us
2. *no* ***clear*** *evidence of adverse health effects*: there is evidence of adverse health effects
3. *while there are* ***small*** *physiological effects*: there are physiological effects
4. *no* ***definite*** *adverse health effects:* there are adverse health effects
5. *need for further research*: delay tactic
   There is always a need for more research to better understand something. The real question is do we have enough of an understanding to change policy?
6. ***possible*** *associations between RF fields and adverse health outcomes*: there are associations between RF fields and adverse health outcomes

Actually there is a boatload of "credible evidence". A primary source would have been Texans made sick by "smart" meters. But as with the ADHS study and the other state studies that ADHS reviewed, the human element is always left out. I'll have more to say about ADHS' mishandling of this

crucial point later in this report.

ADHS' major point number 2 gleaned from the PUCT report is "Smart meters do not emit or utilize ionizing radiation."

I am amazed that is listed as a major takeaway since I don't think anyone in Arizona (or probably Texas either) has made that allegation. The point is a non-sequitur.

Point number 3, again lifted from the report's executive summary (but at least this time credited), is "Smart meters are not intended for, are not designed to, and do not have the capability to harm an individual or direct a person's thoughts or actions (Rivaldo 2012)."

More nonsense. While "smart" meters may not be "designed" or "intended" to cause harm, they *do* in fact have the capability to harm an individual because individuals have been harmed! That was one of the main reasons why the PUCT report was done.

As I mentioned previously, it is outside ADHS' stated goal to include these non-peer-reviewed studies from the four states, but one must *really* question ADHS' judgment for having included the Maine study.

I was able to get the internal emails of the people involved in putting that study together – the "Maine CDC Smart Meters Team". They were completely at sea. They had little idea what they doing. Basics such as how often and when the meters transmitted were completely unknown to them.

For just one example, "Team" member Jay Hyland, sounding very important as the "Director" of the "Maine Radiation Control Program", had this to say *after* the report went out:

> "We are still getting a number of calls per day on the smart meters, AMI, project. There is a fair amount of confusion regarding when the meters broadcast, and what the different pieces of the system are expected to do. My understanding is the meters broadcast on some regular time table like once per hour, unless the meters are acting as a repeater for other meters, in which case the first meter would broadcast 6 times per hour, or something of that nature. Could you please let us know what protocol the meters broadcast under? Answering the when, where, why of the broadcast parameters. Is the maximum broadcast amount something like a tenth of a second every second? The statements we have been hearing and reading say things like "they will be operating for 41 minutes a day" and "they will do most of their communicating at night". While we don't know specifically where this comes from it would be good to know what the protocol or specifications are, because they operate 10% of the time, could easily fall into either of the above statements."

Can everyone agree that "protocol or specifications" would have been "good to know" ***before*** Maine CDC wrote and submitted their report? Wouldn't that have been a basic first step, especially for the Team's "radiation expert"?

Other embarrassing email excerpts and examples of incompetence on the part of the "Maine CDC Smart Meters Team" can be found in my ACC docket submission on the subject. The "Team" was

so lost and out of it they would be comedy if lives were not at stake.

My ACC docket submission also includes all their internal emails which were posted at the Maine Public Utilities Commission docket by the law firm of Taylor, McCormack & Frame. (my ACC docket submission here: http://images.edocket.azcc.gov/docketpdf/0000146483.pdf)

Unfortunately for Arizonans, the uncritical repetition of Maine's sloppy nonsense by ADHS is reminiscent of the gibberish papers accepted and published by the IEEE that I mentioned previously.

One of the points in the Maine report that ADHS chose to pass along was

> "With regards to electromagnetic hypersensitivity (EHS), the smart meters team concluded that the majority of studies indicate that EHS individuals cannot detect EMF exposure any more accurately than non-EHS individuals, and that well controlled and conducted double-blind studies have shown that symptoms were not correlated with EMF exposure."

Wiggle words alert! "Majority of studies" means that there are in fact studies that show the opposite.

Industry has the money to pump out study after study. They have the influence to taint and corrupt government studies as well. Therefore, people doing real, independent research will most likely be in the minority. The intent behind phrases such as "majority of studies" is to create doubt surrounding studies that are in the minority and to marginalize them.

"Weighing the evidence" or "weight of evidence" are similar phrases designed to manipulate perception. Like "majority of studies", it usually means adding up how many studies or evidence is on one side and how much is on the other.

That said, those 'majority of EHS studies' are nonsense when you know how they are conducted. People are expected to react to an RF source like someone would to a light being turned on and off. "Can you feel it now?" "How about now?" While some people *can* react instantaneously to RF, many get sick and stay sick in a way comparable to hay fever. Just because the irritating pollen is removed does not mean they recover immediately.

Shame on ADHS for perpetuating an attempt to marginalize sick people.

ADHS wasted paper to also include the fact that 3 years after the "Team's" report, the Office of the Maine Public Advocate hired True North Associates to measure "smart" meters at 3 residences.

Wow, what an exhaustive, comprehensive sampling! Not surprisingly, True North found the 3 in FCC compliance. Because the FCC guidelines are only thermal based, what that means is that the people who live in those homes can safely rule out being burned by the microwaves they are being bombarded with. I'm sure they are relieved to know that.

ADHS referenced two Vermont studies.

The independent, non-profit EMR Policy Institute did a thorough debunking of the Vermont Department of Health's (VDH) report, "Radio Frequency Radiation and Health: Smart Meters," the first Vermont report reviewed by ADHS. (http://publicservice.vermont.gov/sites/psd/files/Topics/Electric/Smart_Grid/radio_frequency_radiation_and_health_smart_meters%5B1%5D.pdf)

Among its conclusions the EMR Policy Institute found that:

- **"Non-thermal effects are NOT theoretical and HAVE been recognized by experts as problematic."** [**bold** and caps in original]

- "While no reference list is found in VDH's Report, it appears to ignore the wealth of peer-reviewed scientific literature that demonstrates adverse biological effects at exposure levels well below the US FCC RF exposure guidelines."

- "VDH's Report ignores the analysis of the 2008 NAS [National Academy of Sciences] Report that delineates the flawed scientific record upon which FCC's RF safety guidelines are based. Instead VDH finds that "current regulatory standards for RFR from smart meters are sufficient to protect public health.""

- "VDH's Report did not carry out an in-depth analysis to determine if its reliance on the current US FCC RF radiation exposure limits based on science published prior to 1986 fulfills VDH's stated first priority to "focus on prevention, which is perhaps the best investment that can be made in health."" (http://www.emrpolicy.org/files/14mar2012_emrpi_VDH_open_letter_SM_Report.pdf)

The EMR Policy institute also criticized VDH for relying on the discredited CCST report.

The EMR Policy Institute hammered VDH so effectively for the faulty methodology and incorrect measuring equipment that VDH used, that I suspect that's the reason Vermont did a second study, this one commissioned by the Vermont Department of Public Safety and titled "An Evaluation of Radio Frequency Fields Produced by Smart Meters Deployed in Vermont" and performed by Richard Tell Associates. (http://publicservice.vermont.gov/sites/psd/files/Topics/Electric/Smart_Grid/Vermont_DPS Smart Meter Measurement Report - Final.pdf)

That is the other flawed Vermont study ADHS chose to include and use to point out that "smart" meters transmit within FCC guidelines (so that, like Vermonters, we can all stop worrying about being burned by "smart" meter microwaves).

Richard Tell's report is obviously another propaganda piece. It contains all the false, meaningless comparisons with other wireless sources that we've seen in other reports. Towards the end it is hard to keep track of how often Tell has mentioned and compared "smart" meter microwave transmissions to that of things like microwave ovens, cordless phones, wireless routers and even big radar installations. Such comparisons are totally off-subject nonsense and have no business being in a supposedly scientific report on "smart" meter microwave transmissions.

Indeed, in his introductory summary Tell wrote, "This study was aimed at assessing compliance of smart meter signal intensities with regulations established by the Federal Communications Commission (FCC) that prescribe limits for safe exposure of humans." So what does that have to do with a microwave oven or a cordless phone?

Tell was following the script of other reports, trying to use familiarity with other microwave emitting products to make "smart" meters seem OK. He was trying to make it seem like it's OK for utilities to bombard us with microwaves because some of us are likely doing it to ourselves anyway. 'Hey, what's a little more amongst friends?' Only it's really a lot more, and we aren't friends.

Tell discredited himself and exposed himself as an industry shill with the inclusion of this off-subject propaganda and lame attempt at perception manipulation. Additionally, at his bio at his website we find out Tell is basically trained in physics, math and radiation sciences. His expertise is not health or epidemiology yet he implied many health claims throughout his report, all of which are based on "compliance" with FCC rules which – guess what? – he helped write!

From his website bio (http://www.radhaz.com/company/richard-tell-bio):

> *During his tenure at the EPA, his program provided technical support to the Federal Communications Commission (FCC) as the FCC adopted new rules for human exposure to RF fields.*

What a sweet deal! Tell can help write guidelines in the public sector and then make a living in the private sector showing how toxic microwave emissions are OK because they fall within those guidelines.

In his report Tell kept mentioning how the FCC guidelines are based on 30 minute exposure time spans. Hello? How about 24/7/365 time spans, which is the real world?

On page 27 Tell described the FCC guidelines thus: "...present day RF exposure limits are based on time-averaged values of RF power densities...."

We are back to my time-averaged hammer blow analogy. Does anyone think Tell would volunteer to get hit with one? After all, if we time average it, it shouldn't have any "adverse health effects".

For Tell to harp on the fact that the meters he measured comply with the inadequate FCC guidelines that he helped write is meaningless in any serious health discussion.

Scientific Publication Review – an incredible pattern of fraud becomes obvious

In the ADHS' "Scientific Publication Review" portion of their study, wiggle words abound as well some outright cherry picking of information, misrepresentation and what looks like deliberate deception.

Here are some wiggle words and phrases from that portion of the study. The crafted language sets

up a slippery slope, and at the bottom lies our ill health.

"the literature is not clear" —> **Remember wiggle word #2?** ***no clear evidence of adverse health effects*** **means that there** ***is*** **evidence of adverse health effects.**

"Other studies concluded exposure to RF from a variety of sources was associated with adverse health outcomes. However, ..." —> **The studies that show harm are always downplayed with a "however" or some other qualifier.**

"Sometimes a study that suggests an exposure is associated with an adverse health outcome is countered by another similar study that suggests there is no adverse health outcome at that exposure level." —> **How often is "sometimes", and isn't that a reason to at least err on the side of caution anyway?**

"In addition, many of these conclusions were based on results that showed biologic changes. Biologic changes do not always lead to the expected adverse health outcome." —> **So if biologic changes don't "always" make people sick then we don't need to worry?**

The slope is getting steeper by the way, as we now get schooled by none other than NASA in the difference between "biological effects" and "adverse health effects".

According to NASA, "Biological effects are alterations of the structure, metabolism, or functions of a whole organism, its organs, tissues, and cells."

But not to worry, because NASA says, "Biological effects can occur without harming health and can be beneficial." —> **Great! Can I get some beneficial cellular alterations from a "smart" meter?**

According to NASA, an "adverse health effect" is "A biological effect characterized by a harmful change in health."

This whole lead-in is to make a lot of room in your mind for ignoring what is really happening, and to prepare you for the rock bottom of the slope in which ill health gets redefined as health. Check out this next paragraph from the ADHS study:

> "For example Juutilainen, et. al. reviewed *in vitro, in vivo,* and human studies on a variety of adverse health outcomes. The authors stated, "the studies discussed in this review indicate that there may be specific effects from amplitude-modulated RF electromagnetic fields on the human central nervous system. The effects reported (changes in EEG, cerebral blood flow and performance in a memory test) are relatively minor, and do not at present allow conclusions concerning possible adverse health effects."

So, breaking that paragraph down, we learn:

- "adverse health outcomes" from microwaves were studied.
- There "may be specific effects" on your "central nervous system".

- Even though there "may be specific effects" it turns out that actual *reported effects* were changes in the electrical activity of your brain (EEG), the blood flow in your brain, and your memory.

- But you do not have to worry because the effects to your brain are "relatively minor" (relative to what?), and "do not at present allow conclusions concerning possible adverse health effects."

Welcome to rock bottom, everyone, where the effects to your memory are so "relatively minor" that you won't even remember them.

It is simply incredible that this deceptive double talk passes for health science, and that it could be repeated in a health study supposedly done for the benefit for Arizonans.

The ADHS "study" gets worse as one reads along. Permit me to translate.

"No consistent evidence has been found ...." **—> So evidence *was* in fact found.**

"They also stated that although there were some studies that suggested adverse outcomes from lower level exposure to RF, this apparent association might be due to many factors including poor study design, errors, or incorrect assumptions regarding exposure conditions." —> **Or maybe, just maybe, these "adverse outcomes" happened because the studies were done right and microwaves really do make people sick, or rather, experience "adverse outcomes."**

"the weight of scientific evidence from 45 peer reviewed investigations" **—> There's that scale again.**

"They concluded that, based on the available information, an elevated cancer risk associated with cell phone use cannot be ruled out because increased cancer risks were observed in epidemiological studies. Yet, all studies have some methodological deficiencies ...." **—> Cancer cannot be ruled out but don't worry because every study has something wrong with it.**

"Overall, this review concluded that: the large majority of individuals who claim to be able to detect low level of radio frequency EMF are not able to do so under double-blind conditions." **—> Just in case you forgot this phony assertion that ADHS picked out of the sloppy Maine study, here it is again.**

"In another study, Karaca et. al. (2012) stated that "the results of our study support the proposition that cell phones may have a potential to cause hazardous effects on the genome; however, in in vivo conditions, the duration of exposure and the capacity of DNA repair may prevent the development of cancer to an extent." **—> You gotta love that one. Cell phones can mess with your genomes but you'll probably get over it, "to an extent."**

Actually, ADHS cherry picked that last sentence, probably because it was one they could find with the qualifying "however". The gist of Emin Karaca's investigation, "The genotoxic effect of radiofrequency on mouse brain," is really quite different than how ADHS is spinning it by representing the entire study with just that one particular sentence.

(http://www.avaate.org/IMG/pdf/Kanaca_et_al_2011.pdf)

Here is a more representative sentence. In discussing his findings, Karaca wrote: "DNA damage has been found to be increased by 10 times compared to the control cell cultures which were not exposed to RF waves."

Karaca then discussed some other studies that showed DNA damage and he concluded, "Therefore, the results of our study support the findings of those previous studies."

And in the study's abstract we find this summary sentence, "Cell phones which spread RF may damage DNA and change gene expression in brain cells."

ADHS should really be ashamed for misrepresenting the Karaca study, and for attempting to mislead Arizonans.

But if you think that's bad, we now come to the part of the ADHS study where some *serious* misleading, misrepresentation and cherry picking of information occurs. As well, the review it's picked from is so bad to begin with that one could almost say it's cherry picking of *mis*-information.

On page 13 of the ADHS study, there is a table that ADHS describes thus: "Vigjayalaxmi compiled the conclusions on the biological effects of RF exposures from various national and international expert groups. Below is a summary table of these conclusions (2014)."

Wow, "national and international expert groups"! Sounds important ..... until you actually read the review. (Here: http://www.mdpi.com/1660-4601/11/9/9376/htm)

It's junk. I knew that as soon as I read this in the introduction:

> "For human health risk assessment, it is essential to use the "**weight of scientific evidence**" based on the quality of published studies which should include detailed description of RF dosimetry, exposure conditions and protocols consistent with good laboratory practices, sample sizes with sufficient statistical power, as well as confirmation and replication studies conducted by independent researchers. **International organizations, such as the Institute of Electrical and Electronic Engineers (IEEE) and the International Commission on Non-Ionizing Radiation Protection (ICNIRP) have considered all of the available peer-reviewed scientific literature and used the weight of scientific evidence approach** to set-up the guidelines or standards for RF exposures in occupationally exposed individuals and the general public to protect against established adverse effects [12–14]."

There's that "Weight of the evidence" again, and this time IEEE and ICNIRP have their thumbs on the scale.

But it gets much worse.

I couldn't believe my eyes when I read this on page 24 of Vigjayalaxmi's report:

> "Some "negative" comments. (i) The selection procedure used to select the members in expert groups (EGs) in various countries was neither clear nor transparent. (ii) It was difficult and almost impossible to verify "no conflict of interest" of the members in the EGs. (iii) The criteria used for evaluations were not sufficiently described in some reports. (iv) Some members participated in more than one expert group (for example, the experts in SSI report were also some members of ICNIRP). (v) Several EGs did not consider the health risks associated with mobile phone base stations. (vi) There was an apparent "bias" in selecting the papers for evaluation: the reports that support their analysis were reviewed and left out those that contradict their conclusions."

Why would anyone take this review seriously? Indeed, three "expert group" members had this to say, "There should be some concern that there are working group members who are the very researchers assessing the quality of their own studies."

Not only did ADHS conveniently leave that information out of their study, they also left out the Vigjayalaxmi review's discussion of radiofrequency radiation being classified as a Class 2B carcinogen by the World Health Organization (WHO). In fact, *nowhere* in the ADHS study is the WHO's classification ever discussed or even mentioned.

It's an incredible omission.

ADHS completely left the WHO out of the table they created on page 13 of their study.

The Vigjayalaxmi review actually had two tables in it with more information in each than what ADHS displayed in theirs. ADHS's table is a combination of those two tables and a condensation of the information. *But*, when the tables were combined by ADHS, ADHS omitted the WHO along with the WHO's conclusion that radiofrequency is a Class 2B carcinogen.

Was this omission was another flub by incompetents, or a deliberate attempt to deceive the public? While you are deciding, don't forget that ADHS had over a year to get their study right.

Last in the ADHS's "Scientific Publication Review" section of their study, we come to their discussion of a report by Dr. David Carpenter, MD. Carpenter is an expert in radiofrequency health and he advocates against "smart" meters. Carpenter does not equivocate.

I am guessing ADHS included Carpenter to appear "balanced".

In the paragraph summarizing one of Carpenter's articles, ADHS wrote,

> "Excessive exposure to RF radiation increases risk of cancer, male infertility, and neurobehavioral abnormalities. Smart meters usually produce atypical, relatively potent, and short-pulsed RF microwaves whose biological effects have never been fully tested and may, in fact, be more hazardous than other waveforms. Electronic meters can add significantly to aggregate RF exposure."

In "gotcha" fashion, ADHS then dismisses Carpenter out of hand by saying that the measurements he gave for "smart" meters fall within FCC guidelines, the implication being there

cannot possibly be a problem if measurements fall within FCC guidelines so there is no point in considering Carpenter's findings.

ADHS:

> "However, at further study of the article, the article states that a typical electronic meter with a 5% duty cycle at a distance of **20** cm (= 0.656 ft) emits **11** pW/cm2 of RF radiation. This is equal to **0.11** W/m2, which is well below the FCC community guideline of 6 W/m2."

ADHS doesn't seem to realize or acknowledge that this value is actually just *above* the Russian standard that they discuss later.

Individual Health Effects – more wiggling

In the "Individual Health Effects" portion of the ADHS study, ADHS claims to have "conducted a literature search of peer-reviewed articles on the potential effects of RF radiation." But then ADHS says, "Most of the studies concluded that there was no association between RF exposure at low levels and adverse health outcomes."

"Most of the studies" is a variation on "weight of the evidence". If you entered a room full of snakes and "most" of them were nonvenomous would you feel safe?

Submissions from the (ignored) Community – the deception and fraud continues

In the "Submissions from the Community" portion of the ADHS study, ADHS says, "Arizona residents have submitted a plethora of information to the Arizona Corporation Commission's eDocket relating to RF exposures from electronic meters."

What a pity for Arizonans that ADHS learned nothing from that "plethora".

What a pity for Arizonans that once again ADHS cherry picked that information for inclusion in the ADHS study.

What a pity for Arizonans that, in at least one instance, it is obvious that ADHS had absolutely no understanding of what they were reading, that they were in way over their heads.

ADHS wrote:

> "The types of information submitted by residents included news articles, websites, peer-reviewed studies, documents released by governmental regulatory or advisory bodies, anecdotal descriptions of how residents believed electronic meters were affecting their health, and personal opinions."

So how did ADHS respond to all that information? "ADHS reviewed the peer-reviewed studies and government documents" and ignored the rest.

ADHS claims to have "reviewed all 38 journal articles assessing health implications that were submitted to the ACC's eDocket. ADHS provided a summary and response to the three articles that were most often mentioned articles in Appendix B."

Why only the top three? Who knows? Perhaps it was so ADHS did not have to deal with other studies that they didn't think they could spin.

At Appendix B, ADHS reviewed those top three starting with "Electromagnetic and Radiofrequency Fields Effect on Human Health" by The American Academy of Environmental Medicine (AAEM). ADHS listed that article's salient points as:

- In the last 20 years, physicians began seeing patients who reported that electric power lines, televisions, and other electrical devices caused a wide variety of symptoms.
- Multiple studies correlate RF exposure with diseases such as cancer, neurological disease, reproductive disorders, immune dysfunction, and electromagnetic hypersensitivity.
- Exposure limits determined by the FCC and other regulatory agencies do not account for effects from non-thermal radiation.

Still cherry picking, ADHS saw fit not to include what the AAEM itself listed as the salient points of its own statement:

- An immediate caution on Smart Meter installation due to potentially harmful RF exposure.
- Accommodation for health considerations regarding EMF and RF exposure, including exposure to wireless Smart Meter technology.
- Independent studies to further understand the health effects from EMF and RF exposure.
- Recognition that electromagnetic hypersensitivity is a growing problem worldwide.
- Understanding and control of this electrical environmental bombardment for the protection of society.
- Consideration and independent research regarding the quantum effects of EMF and RF on human health.
- Use of safer technology, including for Smart Meters, such as hard-wiring, fiber optics or other non-harmful methods of data transmission.

(http://www.aaemonline.org/emf_rf_position.html)

ADHS completely dismissed the AAEM findings by simply saying, "AAEM are not recognized by the American Board of Medical Specialties."

I guess *that* settles *that* then doesn't it? No point in listening to *that* organization. It didn't join the trade association. And never mind that most of the individual members of AAEM *are* members of the American Board of Medical Specialties.

From the AAEM website (http://www.aaemonline.org/):

> "AAEM physicians have earned a recognized MD or DO degree by an accredited medical school in the United States, Canada or other countries and maintain current licensure to practice medicine. Most AAEM physician members are board certified by one or more of the 24 medical specialty boards of the American Board of Medical Specialties."

Also from the AAEM website:

> "The mission of the American Academy of Environmental Medicine is to promote optimal health through prevention, and safe and effective treatment of the causes of illness by supporting physicians and other professionals in serving the public through education about the interaction between humans and their environment."

Isn't that what the Office of Environmental Health at ADHS should be doing instead of kissing off an organization that really *does* do that?

The AAEM is:

> **The Academy of Firsts:** The founders and members of the American Academy of Environmental Medicine are recognized as the first to describe or the first organization to acknowledge ...

- Serial Dilution Endpoint Titration
- Sublingual Immunotherapy
- Optimal Dose Immunotherapy
- Food Allergy/Addiction
- Provocation/Neutralization
- Avoidance/Reintroduction Challenge Testing
- Rotary Diversified Diet
- Chemical Sensitivity (MCS)
- Total Load Phenomenon
- Environmental Control in the Home, Workplace, and Hospital
- Chemically Less-Contaminated Foods
- Sauna Depuration
- Hepatic Detoxication Enhancement
- Gulf War Syndrome
- Endocrine Mimicry Disorders

- The Role of Mold in the Development of Systemic Illness
- Yeast Syndrome
- CFID/FMS

But never mind all that. Never mind that these are board certified doctors who have made studying the effect of environment on health a priority. Never mind that most of them as individuals are certified by the American Board of Medical Specialties. If their organization as a whole is not part of that certain trade group then forget it, ADHS will not even consider them. What arrogance!

Another article ADHS reviewed in Appendix B is "Update and Review of Research on Radiofrequencies: Implications for a Prudent Avoidance Policy in Toronto" by Loren Vanderlinden (*not* Vanderlin as reported by ADHS) for the Environmental Protection Office at Toronto Public Health (TPH). (http://www.healthyenvironmentforkids.ca/sites/healthyenvironmentforkids.ca/files/cpche-resources/TPH_RFtechnical_report.pdf)

As usual, ADHS summarized the main points of the article by lifting various quotes. It is very telling that ADHS shortened one of the sentences they quoted. The bit about microwave sickness was removed from this sentence:

> "Research in populations near cell phone base stations in Europe indicates that some people living within about 300 metres of a base station are more likely to experience symptoms, such as headache, memory changes, dizziness, tremors, depression and sleep disturbance, **that are similar to a condition known as "microwave sickness"**."

In the ADHS version of the above quote, the last part of the sentence – "that are similar to a condition known as "microwave sickness" – has been removed.

God forbid a condition known as microwave sickness should be allowed to percolate in the brain of anyone reading the ADHS study. They might actually look it up and find that, in addition to thousands of articles and references to it, Merriam-Webster's medical dictionary defines it as:

> "a condition of impaired health reported especially in the Russian medical literature that is characterized by headaches, anxiety, sleep disturbances, fatigue, and difficulty in concentrating and by changes in the cardiovascular and central nervous systems and that is held to be caused by prolonged exposure to low-intensity microwave radiation."

People might actually begin to wonder why there was no in-depth discussion of that condition in the ADHS study, or even any mention of it. Worse, they might even recognize some of the symptoms as their own and realize what the heck has been degrading their health and then demand something be done about it. Oh wait, we did that, and that's why this ADHS study was concocted – I mean, conducted – in the first place!

ADHS also left this TPH statement out of their summarized main points: "There is agreement that biological (i.e. non-thermal) effects from radiofrequencies are evident from research with animals, cell cultures and in humans."

I would say that's important enough to include as a key point in a study about the health effects

of "smart" meters, wouldn't you?

Here is ADHS' incredibly dishonest response to the TPH report:

> "Although this article infers the biological feasibility of RF exposure and nonthermal effects, **this article does not directly relate to the goals of this review.** ADHS focused on RF exposures in the home. RF exposure at or near cell towers tend to be at much higher power densities than that which are measured near electronic meters, and is therefore not within the scope of this report."

Say what? The article "infers biological feasibility of … nonthermal effects"?

The article did not "infer" anything. It was clear. The author came right out and said it: **"There is agreement that biological (i.e. non-thermal) effects from radiofrequencies are evident from research with animals, cell cultures and in humans."**

Shame on ADHS for attempting to deceive Arizonans with that blatant misrepresentation.

And did you note the beautiful irony? ADHS says, "... this article does not directly relate to the goals of this review." Ha! Of course the article doesn't if it claims that "biological (i.e. non-thermal) effects from radiofrequencies are evident."

That should make anyone wonder what the real goals of the ADHS study are. It looks to me like ADHS tipped their hand, and that the real goals of their study were to whitewash microwave sickness and provide liability cover to the Arizona Corporation Commission and the monopoly utilities.

More irony: if "RF exposure at or near cell towers tend to be at much higher power densities than that which are measured near electronic meters", then would it not make sense to be concerned about additional sources of microwaves being added to those areas near cell towers? Shouldn't that be "within the scope of this report"? Instead, ADHS just blew the whole thing off.

And speaking of blowing things off, I was almost left speechless at how ADHS blew off the third and final report in their "Submissions from the Community" section. ADHS is either incredibly stupid or incredibly corrupt to have dismissed this report for the reason they gave.

Dr. Andrew Goldsworthy's "The Biological Effects of Weak Electromagnetic Fields Problems and solutions" is a masterpiece and must reading for anyone with an interest in this subject. (http://www.cellphonetaskforce.org/wp-content/uploads/2012/04/Biol-Effects-EMFs-2012-NZ2.pdf)

Goldsworthy "... is a retired lecturer from Imperial College London, which is among the top three UK universities after Oxford and Cambridge and is renowned for its expertise in electrical engineering and health matters. Dr Goldsworthy spent many years studying calcium metabolism in living cells and also how cells, tissues and organisms are affected by electrical and electromagnetic fields." [from the study's Foreword]

For anyone – anyone except ADHS, that is – who reads Goldsworthy's report, it will be obvious that the report is about how microwaves affect people at the cellular level. Goldsworthy explains how

that is done; he explains the mechanism of harm. All sorts of microwave sources are discussed – cell phones and towers, WiFi, DECT phones, and "smart" meters.

In the course of his report, Goldsworthy mentions frequencies between 6 and 600 hertz twice. He never calls that frequency range "radiofrequency" or "RF" – because it isn't. It's clear that ADHS does not understand frequency modulation or inter-cellular communication and so did not understand Goldsworthy's report at all. In short, Goldsworthy's report is way, way over their heads. In another one of their mistaken "gotcha" moments, ADHS seized on something they did not understand and mistakenly used that to dismiss Goldsworthy's report altogether.

Here is how ADHS dismissed Goldsworthy's 29 page report:

> "ADHS Response: This article references RF between 6 Hz and 600 Hz. However, the range of RF is actually 3KHZ to 3GHz. EMF in the range of 6 Hz and 600 Hz is actually Extremely Low Frequency (1-300Hz) and Intermediate Frequency (IF) Fields (300 Hz - 10 MHz). This review focused on RF and did not research the potential health effects of ELF or IF."

Poor ADHS had no idea what they were doing. Modulation of the carrier wave by other frequencies is needed for data communication. That's how this stuff works!

I contacted Dr. Goldsworthy and asked for his take on the ADHS response. Below is his reply in full:

> Dear Warren
>
> Thank you for your email.
>
> I have checked Page 22 of my article and it appears that ADHS have completely misunderstood it. The ELF frequencies that I referred to are not the actual microwave frequencies emitted by the device. They are instead the frequencies with which the microwaves are modulated; i.e. the frequencies of the pulses that carry the information.
>
> They are damaging because the cell membrane can demodulate the signals so that the harmful ELF frequencies are extracted (in principle, it is like the way in which radio set demodulates radio-frequencies to give the audio frequencies that you hear from the loudspeaker). I have explained a mechanism by which this can happen in the Section on demodulation on Page 19).
>
> However, whatever the mechanism, there are ways to overcome most of the biological effects of the modulation, either by burying them in low frequency random noise or by using a "balanced signal" in which the effect of the modulation is cancelled out by transmitting a signal that is pulsed 180 degrees out of phase on a second microwave carrier. As far as the phone company is concerned, its like two separate phone calls because they are on different microwave frequencies. but as far as the body is concerned, the modulation frequencies are added together and because they are of opposing polarities, they cancel each other out.

Of course, smart meters are likely to be more damaging than cell phones because they are transmitting their pulses 24/7.

I hope this helps.

Best Wishes.

Andrew

In addition to completely misunderstanding studies, misrepresenting them and dismissing them out of hand, another aspect of the "Submissions from the Community" portion of the ADHS study – and one of its major failings – was ADHS's treatment of individuals who reported health damage from "smart" meters.

Rather than thoroughly investigate and test these individuals, ADHS simply listed their health complaints and dutifully tabulated and quantified them. One table may be found in the "Submissions from the Community" portion, and the complete table is in the corresponding Appendix A.

ADHS did not contact any of the "smart" meter victims. The list of "smart" meter victims came only from those who had complained at the ACC docket. There was no statewide publicity of the ADHS study so that other "smart" meter victims could tell their story. There was no 800 number for anyone to call. There were no health surveys. No communities were surveyed with simple symptom related questions. No blood work done along the lines of what Dr. Klinghardt is doing in Seattle where he has isolated specific inflammatory markers in people's blood who are exposed to "smart" meter radiation. (Go to the 29:30 mark in this YouTube video of Dr. Klinghardt for the information ADHS missed: https://www.youtube.com/watch?v=b_wxM6IAF1I)

ADHS could have looked at the state's death rate since "smart" meters have been installed. One does not have to be an epidemiologist to notice a large increase since "smart" meters have been installed. I know for a fact that neurologists in Flagstaff and Cottonwood are overloaded. In Flagstaff it is so bad that only the worst cases get an appointment. Why are these things happening? What has changed? ADHS never asked so ADHS will never know.

In short, a health study that only examines the health of the meters and not the health of the people is worthless.

Field Study Follies – more incompetence

Questions of accuracy arise in the "Field Study" part of the ADHS study.

It is hard to believe that the Arizona Radiation Regulatory Agency (ARRA), who measured "smart" meter microwave emissions for the ADHS study, got accurate readings.

ARRA was measuring at one foot away from AMI ("smart") meters and the highest reading they got was 1450 microwatts per meter squared? (Watts per meter squared is the unit of measurement ARRA used. I use microwatts per meter squared so I will be converting the ARRA measurements by

multiplying by 1,000,000).

Despite the fact that I usually do not measure "smart" meters at that close a distance, still I get readings much higher than what ARRA measured. So since signal strength drops with distance, the ARRA measurements make no sense.

See my YouTube videos **APS Caught Lying** and **APS Caught Lying Again** for examples of my "smart" meter measurements.

It may be that ARRA did not measure enough "smart" meters. 17 "smart" meters is a very small sample.

I *have* found a few "smart" meters that are very weak (despite the APS claim that they all transmit at the same strength). Nevertheless, it still seems doubtful that out of 17 meters the strongest signal would be only 1450 microwatts per meter squared at as little as one foot away.

A more likely explanation is that the Tenmars TM-195 measuring device that ARRA used is cheap and inaccurate. My friends and I who have more expensive, accurate and sophisticated measuring equipment laughed when we saw that ARRA was using a $135 device. For comparison, the Gigahertz Solutions HF35C that you can see me using in my videos was almost $500 (with attenuator). Friends of mine have equipment in the thousands of dollars.

The Tenmars antenna is omnidirectional. A device with a directional antenna would have been more appropriate and accurate for measuring "smart" meters.

Put more technically by Richard Tell in one of the Vermont studies that ADHS promoted and claimed to have actually used in establishing their "field sampling plan":

> "Measurement data can be distorted when using an **isotropic probe** to measure steep spatial gradients close to a radiating element of a smart meter."

Based on that Tell comment that ADHS supposedly read, and based on the following features listed in the Tenmars owner's manual, the Tenmars is therefore an incorrect device to use for measuring "smart" meters:

- For isotropic measurements of electromagnetic fields.
- Non-directional (isotropic) measurement with three- channel measurement sensor.

In short, the HF35C with directional antenna that I use is a correct device for measuring "smart" meters. The Tenmars that ARRA used is not.

Additionally, the Tenmars makes no sound so the user cannot really be sure what they are measuring. My HF35C makes different sounds for different sources of microwave. There's no guessing.

One of the measuring professionals in Arizona wrote me that, "The Tenmars TM-195 RF meter is only accurate on continuous RF emissions. It performs poorly on pulsed radiation emissions. I

consider all RF testing in this report to be inaccurate and therefore invalid. It shows incompetence by the people involved with the report."

Having used a Tenmars TM-195 myself, I disagree with him. The Tenmars TM-195 is never accurate.

At best, the Tenmars is an amateur grade device suited for a homeowner on a budget who wants general readings around the house. It is *not* suitable for a serious study. In a cynical sense, the Tenmars was the perfect choice for the ADHS study – a pitifully inadequate meter for a pitifully inadequate study.

Call a couple of the listed companies that measure professionally in Arizona. I have. They want around $2,000 per day. They aren't using a Tenmars TM-195.

In addition to using an improper device, ARRA measured at an improper distance. Because the emitted wavelength of a "smart" meter is longer than 1 foot, it is best to measure at a greater distance than one foot.

Of course even if ARRA got measurements equal to mine, those measurements would still be under the FCC guidelines. That was never the issue anyway since the antiquated and dangerously inadequate FCC "guidelines" are part and parcel of the entire "smart" meter health problem.

Indeed, much of the "Field Study" section of the ADHS study, because it is centered around those guidelines, exposes how ridiculous those guidelines are. For example, in discussing how compliance with the FCC was met, ADHS wrote, "The **30-minute averages** were calculated by using the top six 5-minute averages from a sampling location. This approach provided an estimation of the **possible maximum 30-minute exposure** throughout a day."

But a day is 24 hours, not 30 minutes. ADHS does not understand chronic exposure, nor does the FCC.

ADHS explains that, "FCC, ICNIRP and IEEE guideline values was [sic] determined based on established adverse thermal health effects. **The purpose of these guidelines are to prevent whole-body heat stress and excessive localized tissue heating.**" ADHS then goes to show that their 30 minute averages of "smart" meter emissions are well below those values.

Even though they listed all the symptoms of "smart" meter victims, it obviously never occurred to ADHS that "smart" meter victims never complained about "whole-body heat stress" or "excessive localized tissue heating."

ADHS wrote, "FCC does not have an established standard for non-thermal health effects **because of insufficient information.**" Actually industry lobbying, military influence, corruption and regulatory capture are the real reasons. "Insufficient information" has nothing to do with it. For how it all began, read the book, *The Zapping of America*. And incidentally, the current chairman of the FCC, Tom Wheeler, was a career lobbyist for the cable and wireless industry, so don't look for the FCC to find "sufficient" information any time soon.

ADHS then launches into the usual series of wiggle words to explain why we shouldn't worry about "smart" meter radiation:

> " Our review of US and most internal government assessments, and scientific publications indicated that there is **no consistent or convincing evidence** to support a cause-and-effect relationship related to the exposure to the RF frequency (900 - 930 MHz) used by the smart meters."

No "consistent" evidence? **—> So there is in fact evidence.**

No "convincing" evidence? **—> Convincing to whom?**

ADHS:

> "The majority of the scientific studies concentrated on the possible health effects from mobile phone exposure. **When compared to mobile phones, smart meters represent lower RF exposure sources** because of the attenuation factor of the building structure (for example: walls), and the distance from radiation signal source (i.e. location of the smart meters and mobile phones in relation to the human body.)"

Once again, ADHS displays their lack of understanding of chronic exposure. "Smart" meters *do not* represent lower RF exposure sources than cell phones. "Smart" meter emissions are 24/7. Cell phone use is intermittent and voluntary.

In an incredible admission of incompetence, ADHS stated, "We do not have access and do not have the ability to review the original paper (in Russian). The source indicated that this value was set based on an animal study consisting of 110 rats exposed to 900 and 1,800 MHz at 5 and 20 W/m2."

What "source"? None is mentioned or footnoted. ADHS does not have "the original paper" but even if they did they couldn't read it because it's in Russian? Honestly, that is just shamelessly sloppy. Ever hear of a translator, ADHS? You don't even need to pay a human being to do it. Here's some free software: http://translation.babylon.com/russian/to-english/

ADHS stated: "ADHS used the Russian standard as a comparison to ARRA's measurements. The results showed that none of the overall average readings of AMI (ranging from 0.000025 to 0.000888 W/m2) or AMR (ranged from 0.000016 to 0.000377 W/m2) meters exceeded the standard (Table 6.)"

The more accurate "smart" meter measurements that I have taken *do* in fact exceed the Russian standard.

In their brief discussion of "smart" meters that do not transmit via microwaves but transmit over existing power lines – Power Line Communication (PLC) – ADHS manages to get that wrong once again. ADHS says, "During the data transmission process, a power frequency field of 60 Hz is produced." Uh, no, 60 hertz is always present on line. Always. PLC does not produce the 60 hertz field.

For more information about power line frequency, ADHS directs us to a publication prepared by the National Institute of Environmental Health Sciences called "EMF: Electric and Magnetic Fields

Associated with the Use of Electric Power." Had ADHS actually been able to comprehend this very simplistic document, they would have learned on page 6 that "Electricity in North America alternates through 60 cycles per second, or 60 Hz." PLC is *not* what's causing that. (http://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf#search=Electric and Magnetic Fields Associated with the Use of Electric Power)

Conclusion – "smart" meters are not found safe

So after all the blatant blunders and bias, the reliance on flawed and corrupt institutions and studies, after all ADHS' inability to understand the basics, after all the wiggle words, seemingly deliberate misrepresentations, obvious omissions and data cherry picking, ADHS announced to Arizona that "***Exposure to electric meters (AMI and AMR) is not likely to harm the health of the public.***"

How can anyone believe them? And even if anyone did, what kind of assurance is "not likely to harm"?

Did we ever hear that about analog meters, that they are "not likely to harm"? No, we didn't.

Note the state statutes:

- **A.R.S. 40-361.B** – Every public service corporation shall furnish and maintain such service, equipment and facilities as will promote the safety, health, comfort and convenience of its patrons, employees and the public, and as will be in all respects adequate, efficient and reasonable.

- **A.R.S. 40-321.A** – When the commission finds that the equipment, appliances, facilities or service of any public service corporation, or the methods of manufacture, distribution, transmission, storage or supply employed by it, are unjust, unreasonable, unsafe, improper, inadequate or insufficient, the commission shall determine what is just, reasonable, safe, proper, adequate or sufficient, and shall enforce its determination by order or regulation.

In particular, note that A.R.S. 40-321.A *does not* say "the commission shall determine what is just, reasonable, likely not to harm, proper, ..."

"Not likely to harm" *does not* equal safe. Safe is safe. "Not likely to harm" is a gamble, gambling with the health of the public, conducting an experiment on the public.

According to Merriam-Webster's dictionary safe means:

1. not exposed to the threat of loss or injury
2. providing safety
3. unlikely to provoke controversy or offense
4. having or showing a close attentiveness to avoiding danger or trouble

5. not causing or being capable of causing injury or hurt
6. worthy of one's trust

"Not likely to harm" does not fall within the definition of safe.

Note especially definition # 1. It *does not* say "not *likely* exposed to the threat of loss or injury."

Note especially definition # 2. It *does not* say "*likely* providing safety."

Note especially definition # 5. It *does not* say "not *likely* causing or being capable of causing injury or hurt."

Safe is not a wiggle word. No one should attempt to redefine it.

As slipshod as the ADHS study is, their "Not likely to harm" classification places wireless "smart" meters, the utilities who use them, and the Arizona Corporation Commission (ACC) who sanctions them, outside of the law.

"Smart" meters have not been found safe and must be removed. Now!

Wiggle your way out of that, ACC.