

Smart Meters Are An Even Larger Threat Than I Had Thought: A More Detailed Consideration of Smart Meters' Microwave Technology, and Its Threats to Health and Civil Liberties



Please Note: I have departed from my typical posting style and formatted the following piece with many of its HTML links clearly visible within the text. I have left the links visible, so that this piece can be printed and shared with others, without losing the availability of web links to referenced materials. Please print this information and share it with your friends, family, and neighbors. It is too important to human health not to share!

I Underestimated the Radiofrequency Radiation Emitted From Smart Meters in My Previous Smart Meter Post

In [my previous post](http://www.non-toxicnurse.com/the-dangers-of-smart-meters-hit-home/), *The Dangers of Smart Meters Hit Home* [<http://www.non-toxicnurse.com/the-dangers-of-smart-meters-hit-home/>], I stated that I was unaware of any smart meters that operated in the microwave range. I made this statement based upon the fact that every specification sheet I could find on the Web for the various models of smart meters stated that they operated solely at 900 MHz. Thus, according to the definition of the microwave range given by more conservative physics textbooks (i.e., 1 GHz to 300 GHz), smart meters themselves would be outside of the most strict definition of microwaves. Please note, however, that many textbooks, and even the U.S. Department of Labor [<http://www.osha.gov/SLTC/radiofrequencyradiation/>], are now referring to frequencies in the range of 300 MHz to 300 GHz as "microwaves," and this is why one might read elsewhere that all smart meters operate in the microwave range.

An E-mail From a Canadian Well-Versed in the Technology Used by Smart Meters

After I published [my previous post](#), I was contacted by a man named Hugh Hinskins, who lives in British Columbia, Canada. Hugh has a B.Sc. in physics from the University of Victoria (1988) and a diploma in Electronics Engineering from Camosun College (1994). He has worked to produce equipment for measuring soil moisture for the University of Victoria, and in electronics engineering, manufacturing, and testing. He has also produced and installed microwave test equipment for detection of RFR fields for his own company. For the past 15 years he has worked in IT and he currently works as a computer systems administrator for Camosun College. Hugh joined the anti-smart meter cause in British Columbia (BC) late last year. He is a member of the board of directors of <http://StopSmartMeters.ca>, a group specifically involved in running an “initiative” petition calling for a vote regarding the forced implementation of smart meters in BC. He is also involved as a technical consultant with the more broadly based <http://StopSmartMetersBC.ca> Coalition. The Coalition is involved with all aspects of the fight against smart meters; they launch lawsuits, lobby politicians, and educate the public.

The Non-Toxic Nurse Receives a Much-Needed Lesson on Smart Meter Networks--They Emit More RFR, and At Higher Levels, Than I Had Previously Thought

Hugh taught me many important things about smart meter enabled neighborhoods, and helped to clear up some questions I had, even after *many* hours of research. It is very difficult to find a schematic of a "typical smart meter installation" on the internet. None of the installation schematics I have found include the frequencies at which the various devices and transmitters in the installation operate. Thanks to Hugh, I am now aware that **homes in many smart meter enabled neighborhoods will be constantly exposed to 2.4 GHz frequencies in addition to the 900 MHz frequencies to which the power industry and smart meter manufacturers are readily admitting!** These 2.4 GHz frequencies are well into the "microwave" portion of the radiofrequency range, even according to the most conservative textbooks of physics. This is quite alarming given that RFR frequencies in the microwave range of 1 GHz to 300 GHz have been shown to be *especially* harmful to human health (per the wide range of experts I cited in my [previous post](#)).

According to Hugh, the 2.4 GHz frequencies will come via the “HAN” portion of the smart meter installation. HAN is an acronym for “Home Area Network.” The HAN is the aspect of smart meter installations that will allow the coming smart appliances discussed in [my previous post](#), which contain radiofrequency radiation emitting microchips, to communicate with each other and be controlled by the electric company. The control of the smart appliances is made possible by a radiofrequency transmitting chip placed in the smart meter itself, which also runs on the 2.4 GHz frequency. As described in [my previous post](#), this chip will give the electric company the ability to shut off any of your smart appliances whenever it pleases, as boasted in this power industry promotional material: http://www.ember.com/press_release.html?id=237. Although the ability of the electric company to depower your smart appliances is marketed by the power industry as a way to prevent large-scale blackouts, one has to wonder if there will be checks in place to ensure that the electric company is not simply turning your air conditioner off in the middle of a heat wave in order to turn around and sell the electricity to the highest bidder during peak usage periods.

The ZigBee Chip

As I learned from Hugh, the official name for the “smart chip,” used in both the smart meter and the smart appliances, is the “ZigBee” chip. Devices that contain it are referred to as “ZigBee enabled devices,” “ZigBee devices,” or “smart” devices. The ZigBee RFR transmitter chip is built to specifications agreed upon by an alliance of leading semiconductor manufacturers, technology providers, original equipment manufacturers, and end-users worldwide (known as the “ZigBee Alliance”), to ensure interoperability between “smart devices” and any given HAN (see www.zigbee.org). Here is an article, written by Mikhail Galeev, an electrical engineer for Motorola, that corroborates all that Hugh has told me about the ZigBee chip and the 2.4 GHz (microwave) signal it emits:

<http://www.eetimes.com/design/embedded/4006430/Home-networking-with-Zigbee>.

Remote Customization Capabilities of Smart Meters: Paving the Way for the Age-Old “Bait and Switch” Tactic

Hugh made a very good point about a tactic that can be used by electric companies during smart meter roll-outs. In an effort to win community approval of smart meter roll-outs, the power industry can install smart meters that do not have their 2.4 GHz HAN capabilities activated at the time of installation. These meters do, however, contain the internal ZigBee chip/RFR transmitter. Therefore, at a later date, **when citizen concern regarding the exact operating frequencies of the smart networks has died down, the utility company can proceed with remotely activating the 2.4 GHz ZigBee RFR transmitters inside the smart meters. Citizens not in possession of RF meters and the time or desire to supervise the operating habits of their smart meter, will be none the wiser.** Therefore, citizens need to be aware that electric companies that claim their smart meters will be operating only at the 900 MHz frequency are typically misleading the public.

Collector Meters: Even More “Extra Special” Than I Had Realized

Hugh also gave me some troubling information about the types of smart meters that I had described as the “extra special” smart meters, in my previous post. These “extra special” smart meters, I have learned, are better known as “collector meters,” “cell relay meters,” or “end-point meters.” Collector meters contain an extra antenna and serve as a transmission hub for all of the smart meters in a particular area. As I mentioned in [my previous article](#), the collector smart meters send and receive more RFR signals than the regular smart meters—exposing those in the home upon which they are attached to more health-threatening RFR. Hugh explained that the situation was actually a bit worse than I had thought.

According to Hugh, in addition to sending and receiving RFR more often than regular smart meters, collector smart meters can run at other frequency bands, in addition to the 900 MHz and 2.4 GHz bands used by regular smart meters—hence, their extra internal antenna. Hugh and one of the sites with which he is affiliated [http://www.stopsmartmetersbc.ca/html/?page_id=338] state that collector smart meters are capable of running on the same frequency bands as cell phones--if you are not familiar with the recent research regarding the dangers of cell phone frequencies, please read [my previous post](#). Collector meters utilize either 850 MHz or 1.9 GHz frequencies, in order to transmit the combined data of 500-1000 homes to the cellular collector antenna for the community. (The cellular collector antenna for a community is typically affixed to a utility pole.) 1.9 GHz is well into the microwave range, even when using the

conservative standard. Thus, not only are the inhabitants of the homes with collector smart meters continually exposed to a higher total number of RFR transmissions than those with regular smart meters (by virtue of it compiling neighborhood-level data), they are *also* potentially exposed to an additional, microwave band (i.e., 1.9 GHz), on top of the 900 MHz and 2.4GHz band capabilities already present in regular smart meters.

The Disconnect Switch: If You Fear the Dark or the Cold, Be Certain Not to Anger “Big Brother!”

Hugh went on to explain that the ZigBee chips in smart meters with which he is familiar have “disconnect switches” in them, which allow for the total shutdown of a home’s power with a stroke of an electric company keyboard. This power industry promotional sheet corroborates the existence of the disconnect switch: http://www.ember.com/press_release.html?id=237. With the surveillance liberties given to U.S. government agencies under the Patriot Act (see <http://www.aclu.org/national-security/surveillance-under-usa-patriot-act>), which have made it much easier to monitor citizens’ whereabouts, and telephone and internet communications, and also the surveillance capabilities of smart meters themselves (see [my previous article](#)), citizens concerned with civil liberties might wonder if the disconnect switch in smart meters will be used on others besides those who fail to pay their utility bill.

The Potential Civil Liberty Implications of the Disconnect Switch: Could It Be Used In the Recent Government Efforts to Suppress Food Freedom?

The disconnect switch in smart meters is especially troubling when one considers the FDA's and USDA’s recent habits of treating farmers and private food purchasing clubs, particularly those who produce or sell raw foods or hold on-site feasts, as criminal. The new documentary film *Farmageddon* is a good introduction to the frequency with which such raids are now occurring in the U.S., and the unreasonable force with which they are being carried out. You can view the *Farmageddon* trailer here: http://www.farmtoconsumer.org/news/Digest_Canty_Farmageddon_Trailer_111710.htm). You can read more about farm and wholesale buying club raids via following these links: <http://www.farmtoconsumer.org/press/press-03aug2011-rawesome.htm> ; <http://farmtoconsumer.org/quail-hollow-farm-dinner.htm> ; <http://www.farmtoconsumer.org/FDA-Sting-Amish-Dairy-Farmer.htm> ; <http://www.farmtoconsumer.org/press/press-15dec2008.htm> .

Will the presence of smart meters lead to farmers who produce real food, and wholesale buying clubs that distribute real food, experiencing complete power outages that undermine the safe storage of their harvests, disable their point-of-sale computer systems, and prevent access to computerized customer databases? I hope not, but so far the USDA, the FDA, and various state agencies, have not been at all respectful of private property, or the fruits of labor, when raiding farms and private food-buying clubs, often at gun point (see above links and the following: http://www.youtube.com/watch?v=X2jgpGyyQW8&feature=bf_prev&list=PL598BC2343201C3BD&lf=results_main ; http://www.youtube.com/watch?v=ioNoehlyyXI&feature=BFa&list=PL598BC2343201C3BD&lf=results_main).

During farm or buying club raids, federal and state agencies have confiscated harvests and, in some cases, have even forced the farmers or club members to destroy their harvests themselves, with substances like chlorine bleach (see http://www.youtube.com/watch?v=VFygR_-wBsc). In some instances, federal and state agencies have confiscated farm families' personal food stores, depriving such families of years' supplies of food. Will there be a day when Big Brother decides it is much cheaper/easier to cut off a farm's or food buying club's power than it is to pay personnel to raid the establishment and confiscate or destroy its resources? (See above links for first-hand accounts of raid victims.)

The fact that state and federal agencies are confiscating the *personal* computers of farmers, food buying clubs organizers, and their children, *and* not returning them (see above links and <http://www.youtube.com/watch?v=FdLxMKuxyr4>), suggests that Big Brother may have an interest in keeping farmers from owning computers and/or using them to communicate. Is the permanent seizure of personal computers meant to prevent victims of raids from telling their stories via electronic means? If so, think of how much more effectively the disconnect switch inside the ZigBee chip of a smart meter could achieve this end. A laptop computer battery only lasts so long.

Furthermore, utilizing a remote-activated disconnect switch inside a farm's smart meter is certainly less likely to evoke bad publicity than is sending a power company vehicle to do the deed. A utility worker climbing a pole is an overt act that could potentially be filmed and later subjected to public scrutiny; especially in the case that a farmer or food buying club has their harvest ruined by a sudden lack of refrigeration. It seems that the only record of a power company employee remotely disconnecting an establishment's electricity, using the disconnect switch in the establishment's smart meter, would be in the possession of the power company, and thus protected from the public's view.

Grateful for My Recent Education

I am very grateful to Hugh for contacting me and sharing facts about smart meters that the power industry seems to be trying to keep hidden. Hidden at least from a citizen like me, who has no background in electrical engineering or physics, and would have had no way of knowing the internet search terms needed to learn in depth about smart meter technology. Please take the time to visit the websites for the anti-"smart" meter campaigns in which Hugh is involved: <http://StopSmartMeters.ca> and <http://StopSmartMetersBC.ca>. These sites are rich sources of information regarding smart meters. They have detailed photos that assist in identification of various regular smart meters, collector smart meters (http://www.stopsmartmetersbc.ca/html/?page_id=338), mesh network components (<http://StopSmartMetersBC.ca>), and the other devices used in various smart meter installations, including those used in the U.S.

Links:

-To view the American Academy of Environmental Medicine's statement of opposition regarding smart meters, visit: <http://aaeonline.org/images/CaliforniaPublicUtilitiesCommission.pdf>

-To read current news regarding smart meter issues around the U.S., visit: <http://stopsmartmeters.org/>

-If you live in Vermont and want to take action to educate the public regarding the dangers of smart meters, visit: <http://wakeuptoptout.org/>

-To learn how you can help small farmers retain the right to produce real food, while protecting your right to consume real food, please visit the Farm-to-Consumer Legal Defense Fund:

<http://www.farmtoconsumer.org/about.html>

-For more information regarding smart meters, including links to informative websites and films, please read my previous post: <http://www.non-toxicnurse.com/the-dangers-of-smart-meters-hit-home/>

NOTE REGARDING COPYRIGHT: All are free to copy and distribute this article, per the author. Please share with your neighbors, so that they too may make an informed decision regarding smart meters. Help keep your neighborhood safe from radiofrequency radiation "electrosmog!"

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NOTE: The author has no background in engineering, physics, or any sort of electrical work. Accordingly, the work of experts who do has been used to inform her writing, as indicated by the HTML references.

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