Complaint

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IDAHO PUBLIC
UTILITIES COMMISSION

January 2, 2012

Idaho Public Utilities Commission
P O Box 83720
Boise, Idaho 83720-0074

Complaints: Idaho Power Company forceful installation of an unwanted time-based meter and communication device known as smart meter against customer request.
Idaho Power Company misrepresentation of product referred to as a smart meter.
Idaho Public Utility Commission failure to address customer concerns regarding the installation of smart meter and failure to provide an opportunity for customers to opt out of the device.

Dear Idaho Public Utilities Commission:

In August 2011, I contacted Idaho Power Company requesting that they do not install a smart meter on my home because of health, privacy, and safety issues and to please provide an opt out form and a form for reading my meter. I was told that because their smart meter technology was wired and used low frequency 60Hz power line communication (TWACS- PLC/PLT) it was secure and had no health risks they would not be providing an opt out.

During a visit by two Idaho Power representatives I asked if their device would allow communication onto the interior electrical wiring of my house to 'talk' with smart appliances. The answer I received was, "What's a smart appliance? I've never heard of a smart appliance" and then I was promised the device would never allow communication on the wiring in my home.

I was also told by Idaho Power that their new metering device would transmit data only when queried by the substation which consisted of one register read per day and a retrieval of hourly consumption data 3 times per day. If this were true, then why is the meter on my house indicating that it is communicating approximately every 30 seconds?

I have received two letters from Idaho Power, and both times I responded that I did not want this type of metering on my house. In their last letter they stated that if I did not allow them to install it, they may terminate my service, or will seek an order from the Idaho Public Utilities Commission to exchange the meter and will enforce it in District court. On December 13, 2011,

twelve days after that letter was written, I arrived home and was informed by a neighbor that while I was out of town a Idaho Power representative accompanied by a police officer, along with a meter installer, came to my house, climbed over the fence and installed a smart meter (no IPUC or District Court order, or any notice was posted on my property or has since been provided to me).

The smart meter is a time-based meter with modem enabled communication. It does not just measure energy usage. It has the capacity to track minute by minute household activity, control household devices, and as stated on one of its software provider websites, it can generate profiles to target customers for other programs and services based on **whatever** information is available about them, including their rate class, usage patterns, location, and energy profile that may have been collected from the customer. This would include knowing the household occupancy at given times. This is a surveillance device.

Idaho Power is using deceptive language to convince customers that this AMI technology will only communicate between the meter and substation and that communication will never enter their house or be able to control their devices. As recorded in the 2003 IPUC Order NO.29362 to Idaho Power Company, the goal of this smart grid technology is to control customer appliances and even customer generation. However, Idaho Power is telling customers that it has no plans to ever do this; it will cost too much.

Idaho Power states that their smart meter technology using power line communications is safe because it uses a 60Hz low frequency signal and a wired meter.

I have attached information written by an engineer who gives an easy to understand explanation of smart meter technologies. In summary, he explains that PLC technology, especially the low frequency TWACS, is one of the worst technologies in regards to possible negative health effects.

He states that when intentional pulses (communication) are put onto electrical wires which were never designed for communication as are the shielded and twisted wires used by cable TV, computers, and telephones, it will generate electromagnetic fields of dirty power, from 120 hertz to 660 hertz plus a lot of higher frequency harmonics, which follow the house wires wherever they travel throughout the whole house. PLC is to be used cautiously because the dirty power generated by neighboring houses will travel on electrical wires from one home into the next home's wiring in every direction not just back to the receiver. It should only be used in remote, sparsely populated areas. I, as well as thousands of customers where this IPUC approved PLC technology is being used, live in densely populated subdivisions where transformers are shared, neighborhoods with nearby homes, or in apartments. These are not remote areas.

PLC is of great concern not only to people who have EMF sensitivities, such as me, but also to the long term health effects of the general population. (Attached: Expressions of Concerns from Physicians, Scientists, and Health Policy Experts)

The IPUC and Idaho Power Company (IDACORP) operate under the authority of U.S. Statues as

well as Idaho law. According to IPUC approved Idaho Power Company Metering Rule D, it is indicated that a meter is a device which measures power and energy supplied to the customer. It does not indicate that a meter includes a communication and surveillance device.

In fact, if this type of device is to be used, it should be according to the National Energy Policy Act of 2005, Section 1252, "Smart Metering", law 109-190 amending 16 USC 2621 -

> Item 14(A)
> "each electric utility **shall offer** each of it customer classes, and **provide individual customers upon customer request, a time-based rate schedule**.... The **time-based** rate schedule shall enable the electric consumer to manage energy use through advanced metering and communications technology.
>
> Item 14 (C)
> Each electric utility subject to subparagraph (A) **shall provide each customer requesting a time-based rate with a time-based meter capable of enabling the utility to and customer to offer and receive such rate.**

According to this law, I did not need to ask for an opt out to this type of meter. I never requested and repeatedly notified the utility that I did not want a time-based rate schedule with a time-based meter and communication technology referred to as a smart meter.

Idaho Power Company has disregarded the law and my civil liberties by forcing this unwanted technology upon me which has resulted in emotional distress and an exacerbation of my medical problems.

I am asking the IPUC to order Idaho Power Company (IDACORP) to immediately remove this time-based meter and communication technology device from my house, to return the analog non-communicating meter for installation, and to allow a certified electrician of my choice to inspect the analog meter before and during the installation process, or that the IPUC allows me to purchase an analog meter and the services of a certified electrician of my choice to install it.

5.5 The household wires

When electrical pulses travel on an electrical wire, it will radiate as an antenna. Wires that are intended to carry communication signals are usually twisted or shielded, as is done with telephone cables, computer networks and cable TV. This greatly limits the radiation from the wires.

Household electrical wiring was never intended to be used for high-frequency signals, so it is not twisted or shielded and therefore radiates more than telephone lines carrying DSL, computer network lines and cable TV connections.

The dirty electricity created by the meter's electronics uses the household wiring as unintentional antennas. However, in some homes this will be indistinguishable from dirty power from other household gadgets (TV, computer, battery charger, etc.) and those used by nearby neighbors.

The real concern is when the electrical wires intentionally carry communication signals, as these are much stronger and will radiate much more powerfully from the wires throughout the house.

The signals vary greatly in frequencies, depending on which Power Line Communication (PLC) technology is used. The low-frequency method will produce a range of frequencies, from 120 hertz up to 660 hertz, plus a lot of higher frequency harmonics that are not intentional, but an indirect result of how they produce the pulsing signals.

The medium-frequency method uses signals around 50 to 100 kilo hertz, while the high-frequency broadband method uses yet higher frequencies.

The problem with all these technologies is that they follow the electrical wires wherever they go. It is not just a question of staying away from the electrical meter, as it is with the wireless technologies. One would have to stay away from all wires in the entire house, or disconnect them totally.

6. Health effects

Almost all the metering systems described here radiate, which is a health concern for the general population and may cause acute symptoms in people with severe electrical hypersensitivity (EHS). For a comprehensive review of the literature, see the BioInitiative report (www.bioinitiative.org).

Millions of people already live with these systems and do not have acute symptoms. The concern for the general population is more any long-term health effects, which will be difficult to identify the cause of and even more difficult to prove. The effect may be an increase in those diseases that have been linked to electronic exposures and "dirty power", such as headaches, ADD/ADHD, anxieties, childhood leukemia, various cancers and electro hypersensitivity. Some people may feel more restless, have problems sleeping and be more irritable.

The amount of energy radiated from a wireless smart meter is similar to that of a cell phone,

sometimes much less. Unlike a cell phone, they may transmit constantly, but are usually also some distance away from people.

The wireless meters that transmit frequently can be compared to a household wireless computer network (typically Wi-Fi) in a number of ways:

- they transmit most of the time
- the transmitters are several feet (meters) away from people, at least most of the day
- radiation also comes from the neighbors, especially in apartments and dense neighborhoods

The energy radiating from household wiring carrying PLC-signals is much less than that from a wireless meter. However, all the wires in the house are acting as antennas, so it is everywhere and often very close to a person.

Some people are more bothered by certain frequencies than others. A person who can use a cell phone may be bothered by the lower frequencies from PLC-signals, or it may be the other way.

The long-term health effects from smart meters will be nearly impossible to distinguish from the effects from cell phones, cell towers, neighbors' wireless networks, and the myriad of other wireless devices that are yet to come.

6.1 The worst technologies

For people who are particularly sensitive to electromagnetic fields (EMF), the effect of smart meter technologies can be devastating. But it may not. There are many people with EHS who have not noticed any difference after their meter was upgraded. However, there have also been several cases where they got severe symptoms and sometimes could no longer live in their home.

In the opinion of this author, the most benign technologies are, in order of safety:

- mechanical, non-communicating meters
- pre-paid meters using a cable to communicate with the in-house display
- meters using dialup telephone lines
- meters read through a communication port, by a person
- ERT meters that are only transmitting when prompted by a passing utility vehicle
- meters that only transmit once a day, using cellular or radio

The worst technologies are:

- any form of frequently communicating network
- all types of wireless networks
- all types of power line communication (PLC)

....

Power Line Filters

Communicating by sending pulses or high frequency signals across the power distribution lines, as well as the household wiring (PLC) is problematic.

The European multinational utility company, E.ON, has developed a line filter which dampens power line signals in the kilohertz range. It is installed next to the electrical meter on customer residences where there have been problems. The filters are not installed elsewhere, due to their substantial cost.

It is unlikely that filters will work for low-frequency pulsing PLC systems, such as the TWACS and Hunt''s Turtle, since the problematic frequencies and harmonics are close to the power frequency.

The filters do not help on effects from the residential power lines along the roads (which act as giant unintentional antennas), nor do they help hypersensitive people when going to grocery stores or visiting other people. With wireless meters, the other end of a building may be fine, but with PLC systems some people may be trapped in their homes. There do not appear to be wholly satisfactory solutions to the problems with PLC technologies, and they should be used with great caution.

Steen Hviid, M.S., Engineer

September 4, 2011

The Tier 2 policy must be particularly flexible, as the situations can be complex. The solution can be difficult where there are close neighbors, for instance.

Using a non-communicating mechanical meter must be one of the options available. In Sweden, a country of 8 million people, about 800-900 people had to be accommodated by keeping their old meter. They self-read their meters and mail it on a postcard monthly, which rural ratepayers in the U.S. have done for many decades.

Other options may work as well. The experiences from Sweden show that when the utilities showed open-minded ingenuity, solutions were usually found.

A Tier 2 accommodation may need to include the neighbors, if close by. In areas where PLC communication is used, it may not be possible to accommodate, thus PLC technology should not be used.

Relocation of the person must be the last resort. So is removing the home from the grid, which is much more complex than it seems, as today's standard off-grid technologies are unlikely to be usable (contact author for details).

VII. Recommendations

- Disallow any form of powerline/power carrier communication (PLC) except where contained within a consenting household. The PLC signals must not be entering other homes, nor the distribution system.
- Direct APS to use the most benign technologies, as outlined in the attached document.
- Direct APS to develop a two-tiered opt-out program:
  - Tier 1 – for people who object
  - Tier 2 – for people with a documented health need
- The opt-out program should not extract any punitive cost from the rate payer. The cost must be minimal for qualifying low-income ratepayers.
- The opt-out program must include people who rent houses or apartments.
- The opt-out program must include when moving to a new location that already has a smart meter installed.
- The Tier 2 opt-out program must be flexible with a range of options, including using a non-communicating mechanical meter.

VIII. About the author

Steen Hviid holds two engineering degrees, including an MS in computer engineering. He lives in northern Arizona in a solar powered house of his own design.

Expressions of Concern from Physicians, Scientists and Health Policy Experts

Andrew Weil, MD.: "Electromagnetic pollution may be the most significant form of pollution human activity has produced in this [20th] century." http://www.drweil.com/drw/u/id/QAA26193.

Robert Becker, Ph.D Nobel Prize nominee noted for decades of research on the effects of electromagnetic radiation says, "I have no doubt in my mind that, at present time, the greatest polluting element in the earth's environment is the proliferation of electromagnetic fields."

The following quotations are available at:
http://www.stralingsrisicos.nl/index.php?option=com_content&view=article&id=23&Itemid=6

William Rea, MD Founder & Director of the Environmental Health Center, Dallas Past President, American Academy of Environmental Medicine

"Sensitivity to electromagnetic radiation is the emerging health problem of the 21st century. It is imperative health practitioners, governments, schools and parents learn more about it. The human health stakes are significant".

Martin Blank, Ph.D Associate Professor, Department of Physiology and Cellular Biophysics, Columbia University, College of Physicians and Surgeons; Researcher in Bioelectromagnetics; Author of the BioInitiative Report's section on Stress Proteins.

"Cells in the body react to EMFs as potentially harmful, just like to other environmental toxins, including heavy metals and toxic chemicals. The DNA in living cells recognizes electromagnetic fields at very low levels of exposure; and produces a biochemical stress response. The scientific evidence tells us that our safety standards are inadequate, and that we must protect ourselves from exposure to EMF due to power lines, cell phones and the like, or risk the known consequences. The science is very strong and we should sit up and pay attention."

Olle Johansson, Ph.D. Associate Professor, The Experimental Dermatology Unit, Department of Neuroscience, Karolinska Institute, Stockholm, Sweden; Author of the BioInitiative Report's section on the Immune System.

"It is evident that various biological alterations, including immune system modulation, are present in electrohypersensitive persons. There must be an end to the pervasive nonchalance, indifference and lack of heartfelt respect for the plight of these persons. It is clear something serious has happened and is happening. Every aspect of electrohypersensitive peoples' lives, including the ability to work productively in society, have healthy relations and find safe, permanent housing, is at stake. The basics of life are becoming increasingly inaccessible to a growing percentage of the world's population. I strongly advise all governments to take the issue of electromagnetic health hazards seriously and to take action while there is still time. There is too great a risk that the ever increasing RF-based communications technologies represent a real danger to humans, especially because of their exponential, ongoing and unchecked growth. Governments should act decisively to protect public health by changing the exposure standards to be biologically-based, communicating the results of the independent science on this topic and aggressively researching links with a multitude of associated medical conditions."

David Carpenter, MD Professor, Environmental Health Sciences, and Director, Institute for Health

and the Environment, School of Public Health, University of Albany, SUNY Co-Editor, the BioInitiative Report (www.BioInitiative.org).

Electromagnetic fields are packets of energy that does not have any mass, and visible light is what we know best. X-rays are also electromagnetic fields, but they are more energetic than visible light. Our concern is for those electromagnetic fields that are less energetic than visible light, including those that are associated with electricity and those used for communications and in microwave ovens.

The fields associated with electricity are commonly called "extremely low frequency" fields (ELF), while those used in communication and microwave ovens are called "radiofrequency" (RF) fields. Studies of people have shown that both ELF and RF exposures result in an increased risk of cancer, and that this occurs at intensities that are too low to cause tissue heating.

Unfortunately, all of our exposure standards are based on the false assumption that there are no hazardous effects at intensities that do not cause tissue heating. Based on the existing science, many public health experts believe it is possible we will face an epidemic of cancers in the future resulting from uncontrolled use of cell phones and increased population exposure to WiFi and other wireless devices.

Thus it is important that all of us, and especially children, restrict our use of cell phones, limit exposure to background levels of Wi-Fi, and that government and industry discover ways in which to allow use of wireless devices without such elevated risk of serious disease. We need to educate decision-makers that 'business as usual' is unacceptable. The importance of this public health issue can not be underestimated."

Eric Braverman, MD Brain researcher, Author of The Edge Effect, and Director of Path Medical in New York City and The PATH Foundation. Expert in the brain's global impact on illness and health.

"There is no question EMFs have a major effect on neurological functioning. They slow our brain waves and affect our long-term mental clarity. We should minimize exposures as much as possible to optimize neurotransmitter levels and prevent deterioration of health".

Abraham R. Liboff, PhD Research Professor Center for Molecular Biology and Biotechnology Florida Atlantic University, Boca Raton, Florida Co-Editor, Electromagnetic Biology and Medicine

"The key point about electromagnetic pollution that the public has to realize is that it is not necessary that the intensity be large for a biological interaction to occur. There is now considerable evidence that extremely weak signals can have physiological consequences. These interactive intensities are about 1000 times smaller than the threshold values formerly estimated by otherwise knowledgeable theoreticians, who, in their vainglorious approach to science, rejected all evidence to the contrary as inconsistent with their magnificent calculations. These faulty estimated thresholds are yet to be corrected by both regulators and the media.

The overall problem with environmental electromagnetism is much deeper, not only of concern at power line frequencies, but also in the radiofrequency range encompassing mobile phones. Here the public's continuing exposure to electromagnetic radiation is largely connected to money. Indeed the tens of billions of dollars in sales one finds in the cell phone industry makes it mandatory to

corporate leaders that they deny, in knee-jerk fashion, any indication of hazard.

There may be hope for the future in knowing that weakly intense electromagnetic interactions can be used for good as well as harm. The fact that such fields are biologically effective also implies the likelihood of medical applications, something that is now taking place. As this happens, I think it will make us more aware about how our bodies react to electromagnetism, and it should become even clearer to everyone concerned that there is reason to be very, very careful about ambient electromagnetic fields."

Lennart Hardell, MD, PhD Professor at University Hospital, Orebro, Sweden. World-renowned expert on cell phones, cordless phones, brain tumors, and the safety of wireless radiofrequency and microwave radiation. Co-authored the BioInitiative Report's section on Brain Tumors by Dr. Hardell

"The evidence for risks from prolonged cell phone and cordless phone use is quite strong when you look at people who have used these devices for 10 years or longer, and when they are used mainly on one side of the head. Recent studies that do not report increased risk of brain tumors and acoustic neuromas have not looked at heavy users, use over ten years or longer, and do not look at the part of the brain which would reasonably have exposure to produce a tumor."

Samuel Milham MD, MPH Medical epidemiologist in occupational epidemiology.
First scientist to report increased leukemia and other cancers in electrical workers and to demonstrate that the childhood age peak in leukemia emerged in conjunction with the spread of residential electrification.

"Very recently, new research is suggesting that nearly all the human plagues which emerged in the twentieth century, like common acute lymphoblastic leukemia in children, female breast cancer, malignant melanoma and asthma, can be tied to some facet of our use of electricity. There is an urgent need for governments and individuals to take steps to minimize community and personal EMF exposures."

James S. Turner, Esq. Chairman of the Board, Citizens for Health Co-author, Voice of the People: The Transpartisan Imperative in American Life Attorney, Swankin-Turner, Washington, DC

"According to the BioInitiative Report: A Rationale for a Biologically-Based Public Exposure Standard for Electromagnetic Fields—from electrical and electronic appliances, power lines and wireless devices such as cell phones, cordless phones, cellular antennas, towers, and broadcast transmission towers—we live in an invisible fog of EMF which thirty years of science, including over 2,000 peer reviewed studies, shows exposes us to serious health risks such as increased Alzheimer's disease, breast cancer, Lou Gehrig disease, EMF immune system hypersensitivity and disruption of brain function and DNA. The public needs to wake up politicians and public officials to the need for updating the decades old EMF public health standards. This report tells how."

L. Lloyd Morgan, BS Electronic Engineering Director Central Brain Tumor Registry of the United States, Member Bioelectromagnetics Society, Member Brain Tumor Epidemiological Consortium

*"There is every indication that cell phones cause brain tumors, salivary gland tumors and eye cancer. Yet, because the cell phone industry provides a substantial proportion of research funding,...

August 1, 2011

Author Insights: Magnetic Fields May Increase Asthma Risks

Filed under: Asthma, Occupational and Environmental Medicine, Pregnancy and Breast Feeding, Public Health, Pulmonary Diseases — Rebecca Voelker @ 3:01 pm

De-Kun Li, MD, PhD, and his colleagues showed that maternal exposure to magnetic fields during pregnancy can increase the risk of asthma in offspring. (Image: Kaiser Permanente)

Electric and magnetic fields are everywhere. They're generated by thunderstorms, microwave ovens, power lines, and even hybrid cars. Scientists for years have examined their impact on human health, but results have been conflicting.

In today's *Archives of Pediatrics & Adolescent Medicine*, researchers present the first study to show an association between maternal exposure to magnetic fields (MF) during pregnancy and an increased risk of asthma in their offspring. The study included 801 pregnant women whose children were followed up for 13 years. To measure their MF exposures, the women wore 24-hour meters.

The researchers found that for each 1-milligauss (mG) increase in exposure per day, children had a significant 15% increased risk of asthma. What's more, children born to women with the highest MF exposures during their pregnancy had a 3.5-fold increased risk of asthma compared with children whose mothers had the lowest exposures. (As a point of reference, other studies have linked increased cancer rates with workday exposures above 4 mG.)

The study could have important implications for asthma prevention. The condition affects more than 9 million children in the United States, and it carries a $30 billion annual price tag. *news@JAMA* spoke with lead author De-Kun Li, MD, PhD, a reproductive and perinatal epidemiologist at the Kaiser Permanente Division of Research in Oakland, Calif, to learn more about the findings.