

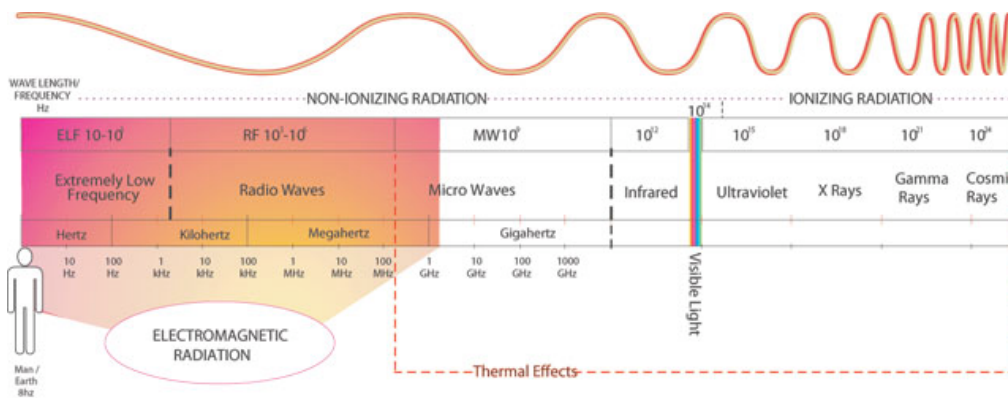
# Harmful Radio Waves: The Invisible Health Threat Of Wireless SmartMeters

By Kate Bernier

**During the Cold War, U.S. Embassy staff members in Russia developed cancer after being continuously exposed to a kind of radiation that is alarmingly similar to that emitted by the new Smart Grid wireless utility meters (SmartMeters).** These staff members and their children all lived and worked in the same nine-story building in Moscow. The Cold war Soviets, in a covert effort to gather intelligence and sabotage U.S. spy equipment, for at least 15 years regularly irradiated the Embassy with low-level pulsed MWs (pulsed microwaves<sup>2</sup>) from across the street. The effects of these non-thermal microwaves include chromosomal, hematological, and reproductive changes, and the growths of numerous types of cancers including breast cancer.<sup>1</sup> In California, PG&E has been hastily and ambitiously installing millions of so-called 'Smart' Meters, and exposing entire communities to the same kind of harmful pulsed microwaves that the Soviets used as a weapon.

A comparison of the embassy situation to the SmartMeter phenomenon is not so far-fetched – both scenarios involve obtaining private information and significant health threats. PG&E's controversial \$2.2 billion SmartMeter project to reach 10 million customers was implemented without meaningful public consultation, education or notification. These wireless meters communicate data from houses and businesses to PG&E using radio frequency signals. This is an **infringement of our privacy rights**, because information can be determined from a household's energy usage on a moment-to-moment basis. For example, SmartMeters can detect how many times you get up during the night, or when residents leave the house or come home. If nothing else, this information reveals to anyone with the correct equipment the number of people who live in a residence, and when they are home or absent. In the wrong hands, such information is a security risk. Further, these details could be sold to energy sector corporations, for whom such information would be very valuable. Lee Tien from the Electronic Frontier Foundation has raised concerns about other possible ways our privacy could be creatively violated, with realistic theories of how criminals and hackers could use this information to plan burglaries, or divorce lawyers could subpoena household information.

Even more significantly, the radio frequency pulses of the wireless meters can have a detrimental effect on our health. **These high-frequency pulses carry extremely low frequency [ELF] modulation signals. Prominent American brain researcher Ross Adey discovered that ELF's can, even at low intensities, alter brain function and human behavior.**<sup>3</sup> SmartMeters emit the same pulsed 450 Mhz frequency used in his experiments.



Cold war Soviets thoroughly researched and used a variety of pulsed MWs as weaponry. They knew, for example, that **ELFs can damage the thyroid. Thyroid problems have been shown to be caused by ELFs from a range of 900 Mhz<sup>4</sup> – roughly the same pulsed frequency emitted by SmartMeters.** The Soviets were also aware of the potential for ELFs to induce immune, central nervous system, and brain dysfunction.<sup>5</sup> Further, the U.S. National Academy of Sciences has more recently acknowledged the “sensitivity of neural systems to [electromagnetic] fields modulated at mammalian brain wave frequencies.”<sup>6</sup> Evidence that these pulses are harmful has been established by many studies.

ELFs may have potentially detrimental effects on the human mind at various levels of consciousness. In 1982, the U.S. Navy concluded that ELFs can affect moods, including the inducement of apathy, depression, and violent behavior.<sup>8</sup> More recently, in his preliminary SmartMeter field measurement survey, Bay Area independent electronics technician/consultant Dan Mattson found that the range of ELFs occurring within each electrical SmartMeter varied from only a few per second up to approximately 30 per second.<sup>7</sup> This range overlaps and resonates with human brain-wave frequencies, including alpha waves. Alpha brain waves, with a frequency range of 8-12Hz, are associated with the subconscious state of mind. Beta waves, which correlate with conscious thought, also fall within the ELF range of Mattson’s findings. **Mattson also determined that one of his clients in San Leandro, CA had a SmartMeter that pulsed approximately 100 times in 15 minutes. This is directly contrary to PG&E spokesman Paul Moreno’s assurance that the SmartMeters emit low-level frequency pulses only once every four hours for less than one second.** Others in the Bay Area have also observed this discrepancy in measurements.

Pulse modulation is characterized as having very high peak power and low average power – instead of radiating continuously at low levels like a cell phone, pulses fluctuate on and off repeatedly in spiked bursts. Nobody seems to agree what the SmartMeter peak pulses are, and this is crucial in determining exactly how harmful the radiation exposure levels are. **According to prominent NIH researcher Allen Frey, peak pulse exposure with the appropriate ELF modulations is the critical factor in ELF-induced, inter-cranial sound and word perception in both normal and deaf human subjects.**<sup>9,10</sup> In the meantime, PG&E is using an old trick of misrepresenting the strength of the radiation with time-averaged power calculations that include the inactive intervals between pulses.<sup>11</sup> This is like saying that zapping your hand in a microwave oven for two minutes is okay because the radiation is not dangerous when averaged over the rest of the week.

**PG&E often emphasizes that their SmartMeters meet the Federal Communications Commission (FCC) specifications, but these standards are both embarrassingly outdated, and simply misleading.** FCC safety standards are based on the theory that if a source emits radio waves that do not actually cook human tissue, then that source may be deemed harmless. It is a thermal-based formula that dismisses any detrimental non-thermal effects of radio waves. Prominent authorities in medicine and public health – including UC Berkeley School of Public Health director Joel Moskowitz, and the Radiation Protection Division of the Environmental Protection Agency – have openly questioned the reliability of FCC’s safety standards.

A recent study from Italy shows that the currents of a high-frequency device (similar in form and function to the SmartMeter) superimposed on low-frequency power lines penetrate human cells more deeply than the power frequencies acting alone.<sup>12</sup> Noteworthy also is the fact that many of these frequencies open up the blood/brain barrier to environmental toxins.<sup>13</sup> Contemporary Russian scientist Yuri Grigoriev in his article “Electromagnetic Fields and the Public: EMF Standards and Estimation of Risk” warns that “**existing standards cannot guarantee the safe, healthy development of the next generation of humanity.**”<sup>14</sup>

**These not-so-SmartMeters are being deployed worldwide at lightning speed, with no Environmental Impact Report (EIR).** An EIR is necessary for adding new bike paths to a park, but not for installing radiation-emitting devices in our homes. Already, customers are reporting related adverse health impacts from the meters, including tinnitus and pressure on the ears (known as “Frey Effect”<sup>9</sup>). What opt-out choices could PG&E realistically provide these customers, as ubiquitous smart meter radiation bounces from house to house throughout both commercial and residential neighborhoods in its mesh network?

The simple fact is that these meters are untested, and have not been subject to even a very standard environmental impact report. There is enough evidence of potential risks that the widespread implementation of these meters at this stage is reckless and dangerous.

**PLEASE TAKE ACTION NOW!** Tell our representatives that we don't want these untested meters thrust upon us. Industry regulators like the CPUC must do their job, which is to ensure safe, reliable and affordable utility service. We need to retain or restore the analog meters at no additional cost to the customer!

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...virtually all investigators who have studied the phenomenon [Frey Hearing Effect] now accept thermoelastic [induced temperature changes] expansion of the brain...to be the mechanism of acoustic perception of short pulses of RF energy...application of the microwave hearing technology could facilitate a private message transmission. It may be useful to provide a disruptive condition to a person not aware of the technology. Not only might it be disruptive to the sense of hearing, it could be psychologically devastating if one suddenly heard "voices within one's head." **Reference:** *Addendum to the Nonlethal Technologies—Worldwide (NGIC-1147-101-98) study. Released in 2006, under the FOIA by the U.S. Army Intelligence and Security Command.*

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For more information read: "**The Body Electric**," Robert Becker.

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