

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Investigation on the
Commission's Own Motion to Determine
Whether Pacific Gas and Electric Company
and PG&E Corporation's Organizational
Culture and Governance Prioritize Safety

Investigation 15-08-019
(Filed August 27, 2015)

COMMENTS OF EMF SAFETY NETWORK

Pursuant to Rule 14.3 of the Commission's Rules of Practice and Procedure, EMF Safety Network (Network) submits these Comments in the Order Instituting Investigation on the Commission's Own Motion to Determine Whether Pacific Gas and Electric Company and PG&E Corporation's Organizational Culture and Governance Prioritize Safety. Pursuant to rule 11.6, an extension for the due date for Comments was granted. The due date was moved from January 30, 2019 to February 13, 2019 in an email ruling filed January 24, 2019, by Administrative Law Judge Peter V. Allen. Network will submit this pleading on the due date.

The scoping memo states the Commission will examine PG&E's safety culture in light of providing, "continuous, safe, and reliable gas and electric service at just and reasonable rates" to Northern Californians, "in order to protect human life and sustain prosperity." The scoping memo stated it will consider a range of factors. Network will focus on: the safety and reliability of utility service; the operational integrity and technical unity of components within PG&E's gas and electric transmission and distribution systems; the utility's relationships with and role in local communities; and the ability of the state to implement its energy policies, including the need to reduce greenhouse gas (GHG) emissions and local criteria pollutants in both the utility sector and the economy as a whole.

Comments on the scoping memo questions about PGE's corporate governance, management, and structure are as follows:

- Every effort should be made by PG&E and the Commission to ensure customer safety and reasonable rates.
- Instead of PG&E or the PG&E board filing their own safety compliance data, a third-party independent safety board should be created to oversee and audit PG&E.

- Network supports a change in PG&E leadership and board.
- In order to function and protect Corporate assets, Company failures must be corrected. This is effectively accomplished by focus on Company administration and infrastructure without undue influence by the Corporation. Under the current structure the Company delivering power has no operative interface with communities who receive the services, and who have firsthand experience of the safety problems. Broader-based and more comprehensive training and supervision of PG&E employees should involve time spent with municipal groups that are concerned about gas fires and safety hazards, such as mapping all underground utility lines, and inspection of above ground infrastructure. Similarly, CALFire, Forestry and community FireWise groups can provide direction and useful input on wildfire concerns if an interface opportunity were created.
- If PG&E separates their gas and electric companies both still need to be regulated by the Commission.
- If PG&E is divided up, every city and county in PG&E's service territory should be given the chance to become their own publicly owned utility.
- PG&E staff should be required to consult union leaders on a regular basis regarding the safety concerns.

The safety and reliability of utility service:

PG&E deployed over nine million gas and electric smart meters on homes and businesses in California. These devices emit pulsed radio frequency radiation (RFR) and “unintentional” radiation which creates power quality problems. Peer-reviewed studies show RFR harms people and nature. Children, the elderly, and those already ill are more vulnerable. PG&E was ordered by the CPUC to provide an analog meter opt-out for customers. There has never been a public investigation of smart meter health or fire hazards by PG&E or the Commission. The Commission should require PG&E to provide data on smart meter failure statistics and numbers of replacements on a quarterly basis (type of failure and source cause of failure such as power surge, faulty installation, etc). An independent firm should be responsible for summarizing this data for the Commission, and it should be made public. Since smart meters and smart grid equipment were added to the utility infrastructure, and meter readers nearly eliminated, the potential for smart meter fires and explosions has increased wildfire risk, and placed

communities at increased risk when power surges occur, leading to smart meter failure and failure of arc fault interrupters inside buildings.

Network filed a formal complaint (A.10-04-018) about smart meters at the CPUC in 2010, written by experts in CPUC law, science and economics. We asked for a moratorium; RFR technical study; safety hearings (including health impacts and fire hazards); and to allow customers to opt out. The CPUC dismissed the filing based on PG&E's protest. No safety hearings were held. Network then participated in A.11-03-014. In that proceeding, no investigation of safety was undertaken. Decision 19-01-052 refers to D.10-12-001 (which was a denial of Network's rehearing request in A.10-04-018) stating, "*we have already considered the health impacts of smart meters. Nothing in our Safety Policy requires us to reconsider prior decisions absent new evidence.*" Considered an issue, especially one as important to Californians as the safety of their homes and businesses, warrants an investigation, not merely consideration. Network provides new evidence in these comments. Smart meter and smart grid hazards need to be investigated openly, with transparency and accountability, to prioritize safety.

The operational integrity and technical unity of components within PG&E's gas and electric transmission and distribution systems:

In California and around world, smart meters have been linked to fires, explosions, and damaged appliances. For every fire started at the meter, in an appliance, or on wiring, smart meter causality should be suspected.

The Commission and PG&E are aware of smart meter fires hazards, but their public findings are scanty and redacted. In the CPUC's Annual Report to the Governor and the Legislature May 2014, they state, "*There was some concern regarding fires in smart meters but this was investigated by CPUC staff in 2013. Staff determined that, of reported fires involving smart meter installation, none were actually caused by the smart meter.*" <http://emfsafetynetwork.org/wp-content/uploads/2016/01/Smart-Grid-Annual-Report-2013-.pdf> (p.5)

2013: PG&E Data Response on smart meter fires. *Much of the document is redacted, and PG&E states, "In no instance has PG&E found that a SmartMeter™, either gas or electric, has caused a fire."* However PG&E now monitors temperature and voltage readings of smart meters for hazardous conditions. "*PG&E issues field orders to perform safety inspections at potentially overloaded and or high temperature sites. The data has led to panel inspections at customer premises that have found undersized wiring, physical panel damage, and overloaded conditions.*"

<http://emfsafetynetwork.org/wp-content/uploads/2010/03/Data-Response-PGE-smart-meter-fires.pdf>

In 2011 PG&E, The Utility Reform Network, CPUC Office of Ratepayer Advocates, California Energy Commission, CPUC Energy Division and others discussed “smart meter incidences involving fires...”

Meeting agenda: http://emfsafetynetwork.org/wp-content/uploads/2016/01/TAP-Agenda-1282011-inc-smart-meter-fires-SB_GTS_0652075.pdf

In 2009 PG&E reported to the California Public Utilities Commission (CPUC) smart meters interfered with AFCI’s and GFI’s *“During the second quarter of 2009, PG&E discovered a limited number of cases of SmartMeter™ radio interference with customer electronics, including ground fault circuit interrupters (GFCI) and arc fault circuit interrupters (AFCI). Pages 6-7 Advanced Metering Infrastructure; January 2010 Semi-Annual Assessment Report and SmartMeter™*

PG&E customer and fire reports

In 2012 a whistleblower Pat Wrigley, who worked as a PG&E meter reader for over nine years testified at CPUC judicial hearing. He said smart meters catch fire and PG&E is covering up the risk.

<https://youtu.be/EnxIoItNUek>

Matt Beckett, a California fire department captain stated, *“Two years ago PG&E replaced that meter [analog] with a “Smart Meter”. Immediately following we noticed power surges in the form of our refrigerator motor intermittently speeding up simultaneously with our lights becoming brighter. As a seventeen year veteran and current Fire Captain this caused me to become very concerned.”* The Smart meter on his house was replaced with an analog, and there were no problems, until a new Smart Meter was reinstalled. This time he had two surge protectors burn out. <http://emfsafetynetwork.org/fire-captain-finds-hazardous-power-surges-follow-smart-meter-installations/>

Fire captain, Ross writes, *“I was at home doing yard work in the late afternoon when my wife came outside and told me that “half the power was off again”. This had been happening on and off for about two weeks ... I then went outside to where my meter was and I could instantly smell the burnt electrical smoke. As I was looking at the meter I inadvertently placed my hand on the meter itself and almost burned my hand...the metal box into which all the home’s wiring from the meter is stored was also too hot to touch with a bare hand.”* <http://emfsafetynetwork.org/smart-meter-arcing/>

Bakersfield, California, “Smart Meter Blows Up At Business” (Turnto23.com 2009): *“employees at Henry M.M. Engines said their Smart Meter caught fire, which sparked concern and questioned the*

safety of these new meters. On Wednesday, a PG&E technician was called out to replace the meter after employees found the device burned up and lying on the ground.” “Basically it was an explosion. I saw the meter on the ground and the face plate was blew off and the whole meter was blackened. Even the breaker box that housed the meter was blackened by what seemed to be an electrical short,” said Vernon Nelson, an employee.”

Berkeley California Fire Department report (2010) states, “Investigation revealed the newly installed PG&E Smart Meter in the kitchen was hot to touch and smoking, with a orange glow inside the meter housing” <http://emfsafetynetwork.org/wp-content/uploads/2010/07/Berkeley-Smart-Meter-Fire.pdf>

Stockton California (2015): Dozens of smart meters exploded and caught fire after an electrical surge cut power to about 5800 homes near Stockton CA. CBS News reports, “A power surge left thousands without power for most of the day in Stockton after smart meters on their homes exploded on Monday.” “Neighbors in the South Stockton area described it as a large pop, a bomb going off, and strong enough to shake a house.” <http://emfsafetynetwork.org/dozens-of-smart-meters-explode-from-power-surge/>

Industry and expert commentary on smart meter fires:

IEEE [professional technological association]: “Obviously all companies with smart meter programs, and all their suppliers and sub-contractors, are going to have to take a close look at the issue of fire hazards. This is just the beginning of a difficult story.” <http://spectrum.ieee.org/energywise/energy/the-smarter-grid/smart-meter-fire-reports>

TESCO: According to research by TESCO smart meters are more prone to “hot socket” than analog meters. Failure modes include catastrophic (expected). “Catastrophic failure” is defined as “a meter which has burnt, melted, blackened, caught fire, arced, sparked, or exploded.”

<http://emfsafetynetwork.org/wp-content/uploads/2010/03/TESCO-Lawton-on-Hot-Sockets.pdf>

Wireless Smart Meters and Potential for Electrical Fires. Commentary by Cindy Sage, Sage Associates and James J. Biergiel, EMF Electrical Consultant July 2010: Smart meters can create an over-current condition on the wiring and produce heat, which the neutral cannot properly handle, which can lead to fires. “The use of smart meters will place an entirely new and significantly increased burden on existing electrical wiring because of the very short, very high intensity wireless emissions (radio frequency bursts) that the meters produce to signal the utility about energy usage.” “The location of the fire does NOT have to be in close proximity to the main electrical panel where the smart meter is

installed.” *“A forensic team investigating any electrical fire should now be looking for connections to smart meters as a possible contributing factor to fires.”* <http://emfsafetynetwork.org/wp-content/uploads/2011/06/Smart-Meters-Risk-for-fire.pdf>

Other findings:

Ontario Fire Marshall Report: *“During our initial research of the new meters we encountered an unusual amount of fire incidents involving smart meters. “Anecdotal information supported [the fact that] problems occurred after the old analog meters were updated to the new digital smart meters.” The report noted the possibility of a fire resulting from “a loose connection in the meter base.” “What could be the reason for this? The old meter base connections may not have been in a condition for seamless exchange to a new meter. New meters may have defects that cause electrical failures or misalignment with old meter base. Careless installation during changeover.”*

<http://www.oafc.on.ca/article/unusual-number-fires-smart-meters-linked-ontario-fire-marshal-says-faulty-base-plates-could>

American Electric Power (AEP) How hot are your meters? 2015: *“Today’s meters are light. The old ones were heavy and dissipated heat a lot better, actually,” said Ken Dimpfl, of American Electric Power (AEP). In 2010, they started seeing smart meter failures due to high temps or thermal overload. “This began our journey of looking at ‘hot sockets,’” Dimpfl said. “Over the course of a two-year period, AEP analyzed roughly 25 meters that failed. Post event analysis concluded that the root cause was a poor connection at the meter.”*

<http://www.intelligentutility.com/article/15/10/how-hot-are-your-meters>

Hydro Quebec requires 3 meters distance between a smart meter and gas tank.

<http://ofsys.hydroquebec.com/T/OFSYS/SM2/2/S/F/4947/13087532/Dnm3qyNW.html>

Norm Lambe, an insurance claims adjustor, contends the utility companies are tampering with the evidence by immediately removing smart meters when there’s a fire. *“A dangerous precedent is being followed in the insurance industry concerning the investigation of smart meter fires...When the local electrical utility arrives and determines that a smart meter is the issue, they have been removing the meter, and preventing the inspection of the meter by the experts...”*

<https://web.archive.org/web/20150907164343/http://www.examiner.com/article/are-insurance-companies-avoiding-the-smart-meter-problem>

A summary of evidence on smart meter fires can be found here: <http://emfsafetynetwork.org/smart-meters/smart-meter-fires-and-explosions/>

The utility's relationships with and role in local communities:

In D.13-040-12 PG&E was fined \$390,000 because the head of their smart meter program, William Devereaux, falsified his identity and spied on customers opposed to smart meters. Devereaux circulated emails to his co-workers calling activists names, like “insurgents”. PG&E coordinated moving an entire smart meter deployment yard to derail a non-violent protest and sent an employee to surreptitiously observe and report on the reactions of the protestors, who transmitted pictures of them to PG&E. PG&E did not voluntarily end this activity, but only did so after Devereaux was caught. After Mr. Devereaux's improper activities were exposed, media outlets reported on the spying after PG&E sent redacted investigation documents that they provided to CPSD regarding the matter. PG&E only redacted PG&E and third party information, but did not redact private information of activists, including names, email addresses and telephone numbers. The vast majority of, if not all, activists identified in the documents reside within PG&E's service area, and are presumably PG&E customers. Thousands of emails between PG&E and the CPUC made public in 2015 further illustrate PG&E's “safety culture” and contempt for customers.

Brian Cherry, PG&E's Vice President of Regulatory Affairs, responds to Commission President's advisor Carol Brown who is asking for a solution to give to people complaining about smart meters. He writes, “Prozac might be a solution!” <http://emfsafetynetwork.org/wp-content/uploads/2019/02/Prozac.pdf>

Cherry writes on 8/22/2011 to: Paul Clanon (CPUC executive director); Frank Lindh (CPUC attorney) and Michelle Cooke (Interim Director of CPUC Consumer Protection and Safety Division): *“Just a reminder, we are the first to propose a solar generator in space that will beam RF waves down to a receptor site and convert it to DC current. We have changed our receptor site from the Mojave desert to Sebastopol.”* <http://emfsafetynetwork.org/wp-content/uploads/2019/02/Sebastopol-RF-.pdf>

Cherry writes, *“Mike [Peevey- Commission President] grumbled about the CCSF PFM [City and County of San Francisco Petition for Modification] and the folks in Sebastopol [sp] who want to delay SmartMeter implementation. He implied that this wasn't going to happen and that by the time the Commission got around to acting on it, we would have installed all of our meters.”*

http://emfsafetynetwork.org/wp-content/uploads/2014/12/PGE-Letter-to-Mr.-Sullivan-Exhibits-1-17_-

[12-22-14.pdf](#) (Exhibit 2, pdf page 9)

Peevey writes to PG&E's Brian Cherry "If it were my decision I would let anyone who wants to keep their old meter keep it, if they claim they suffer from EMF and/or related electronic-related illnesses and they can produce a doctor's letter saying so (or expressing concern about the likelihood of suffering same). I would institute such a policy quietly and solely on an individual basis. There really are people who feel pain, etc., related to EMF, etc., and rather than have them becoming hysterical, etc., I would quietly leave them alone." <http://emfsafetynetwork.org/wp-content/uploads/2019/02/Peevey-EMF-pain.pdf>

PG&E helped some customers restore analog meters and ignored others. Cherry writes to Michael Peevey's advisor Carol Brown, "...People who call into our call centers independent from the bloggers are not being switched over if they have a smartmeter at this time. We are limiting the switch-overs to the real problem people from the blogs. Are you ok with this approach? We are trying to prevent the dam from breaking." Later he writes Brown again stating there were 30 more calls, "It's getting out of hand." Brown responds, agreeing to their plan to end the change-outs, and calling the situation "a mess".

The above emails and more can be read here: <http://emfsafetynetwork.org/wp-content/uploads/2015/04/Overview-of-PG&ECPUC-emails-on-smart-meters.pdf>

The ability of the state to implement its energy policies, including the need to reduce greenhouse gas (GHG) emissions and local criteria pollutants in both the utility sector and the economy as a whole:

PG&E asserted smart meters are like RFR devices such as cell phones. Smart grid technologies are adding GHG emissions to the environment. The Commission should investigate how RFR is an environmental pollutant. IEEE Spectrum article, "A Smart Phone Uses as Much Energy as a Refrigerator?" cites a new paper that "explores whether efficiency can outpace the staggering growth in digital gadgets' power demand." "[*The Cloud Begins With Coal: Big Data, Big Networks, Big Infrastructure, and Big Power*](#)," investigates the energy draw of information-communications technologies (ICT) and how they are dwarfing what we traditionally think of as energy hogs in the home." <https://spectrum.ieee.org/energywise/energy/environment/smart-phones-uses-as-much-energy-as-a-refrigerator>

"The Power of Wireless Cloud," is an analysis of the impact on energy consumption of the growing

popularity of accessing cloud services via wireless devices. “Our energy calculations show that by 2015, wireless cloud will consume up to 43 TWh, compared to only 9.2 TWh in 2012, an increase of 460%. This is an increase in carbon footprint from 6 megatonnes of CO₂ in 2012 to up to 30 megatonnes of CO₂ in 2015, the equivalent of adding 4.9 million cars to the roads. Up to 90% of this consumption is attributable to wireless access network technologies.”

<https://ceet.unimelb.edu.au/publications/ceet-white-paper-wireless-cloud.pdf>

Peer-reviewed published science shows wireless radiation harms public health.

The BioInitiative Reports reference more than 6000 peer-reviewed published studies. Summary of key scientific evidence includes:

Evidence for Damage to Sperm and Reproduction

Evidence that Children are More Vulnerable

Evidence for Effects on Autism (Autism Spectrum Disorders)

Evidence for Electrohypersensitivity

Evidence for Effects from Cell Tower-Level RFR Exposure

Evidence for Effects on the Blood-brain Barrier

Evidence for Effects on Brain Tumors

Evidence for Effects on Genes (Genotoxicity)

Evidence for Effects on the Nervous System (Neurotoxicity)

Evidence for Effects on Cancer (Childhood Leukemia, Adult Cancers)

Melatonin, Breast Cancer and Alzheimer’s Disease

Stress, Stress Proteins and DNA as a Fractal Antenna

“There is now much more evidence of risks to health affecting billions of people world-wide. The status quo is not acceptable in light of the evidence for harm.” David O. Carpenter, MD, co-editor Bioinitiative Report. The authors conclude, *“EMF and RFR are preventable toxic exposures. We have the knowledge and means to save global populations from multi-generational adverse health consequences by reducing both ELF and RFR exposures. Proactive and immediate measures to reduce unnecessary EMF exposures will lower disease burden and rates of premature death.”*

<http://www.sciencedirect.com/science/journal/09284680/16/2-3> and www.bioinitiative.org

http://www.bioinitiative.org/report/wp-content/uploads/pdfs/section_1_table_1_2012.pdf

The National Toxicology Program (NTP) published a 25 million dollar study which is one of the largest

and most comprehensive study on cell phone radiation and cancer in the United States. Results showed that rats exposed to cell phone radiation developed two types of cancers: glioma, a brain tumor, and schwannoma, a heart tumor. ” The NTP found “clear evidence” of cancer from exposure to cell phone frequencies. <https://goo.gl/jgh5kf>

A recent Italian study produced similar results. Report of final results regarding brain and heart tumors in Sprague-Dawley rats exposed from prenatal life until natural death to mobile phone radio frequency field representative of a 1.8 GHz GSM base station environmental emissions.

<https://www.sciencedirect.com/science/article/pii/S0013935118300367>

The International Agency for Research on Cancer at the World Health Organization classifies cell phone radiation as a 2B (possible) carcinogen. Cancer can take decades to develop. It’s important to reduce exposure to cell phones and other wireless devices. Saving copper lines is an important solution for our future. <https://goo.gl/BrkpG8>

International scientists are calling for immediate measures to reduce RFR. The International EMF Scientist Appeal signed by 235 scientists from 41 nations warn: *“We are scientists engaged in the study of biological and health effects of non-ionizing electromagnetic fields (EMF). Based upon peer-reviewed, published research, we have serious concerns regarding the ubiquitous and increasing exposure to EMF generated by electric and wireless devices. These include—but are not limited to—radiofrequency radiation (RFR) emitting devices, such as cellular and cordless phones and their base stations, Wi-Fi, broadcast antennas, smart meters, and baby monitors as well as electric devices and infra-structures used in the delivery of electricity that generate extremely-low frequency electromagnetic field (ELF EMF).”* *“Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans.”*

The following are quotes from science experts who signed the The International EMF Scientist Appeal.

- *“Based upon epidemiological studies there is consistent evidence of increased risk for brain tumors (glioma and acoustic neuroma) associated with use of wireless phones.”* Lennart Hardell, MD, PhD University Hospital, Orebro, Sweden
- *“The harmful effects of electromagnetic fields, regardless of their frequencies, are now scientifically settled. Pregnant women (the fetus) and children and adolescents are particularly*

vulnerable.”- Dominique Belpomme, MD, MPH, Paris V Descartes University, European Cancer & Environment Research Institute.

- *“U.S. regulatory standards and international guidelines only control for short-term heating of tissue. The standards do not protect us from the low-intensity, chronic exposures to electromagnetic fields (EMF) that are common today. The scientists who signed the Appeal request that the UN and member nations protect the global human population, and animal and plant life from EMF exposures. There has been strong support from the international scientific community for the Appeal, even among those who believe that scientists should not take public policy positions. Some have taken personal risks to sign the Appeal because this is a public health issue that affects everyone now, as well as future generations.”* Joel Moskowitz, Ph.D., Director of the Center for Family and Community Health, School of Public Health, University of California, Berkeley, USA <https://www.emfscientist.org/index.php/emf-scientist-appeal>

Proximity to RFR antennas is harmful

The following peer-reviewed, published studies examine the adverse effects of wireless radiation in relation to antenna location.

Biological effects from exposure to electromagnetic radiation emitted by cell tower base stations and other antenna arrays *“Both anecdotal reports and some epidemiology studies have found headaches, skin rashes, sleep disturbances, depression, decreased libido, increased rates of suicide, concentration problems, dizziness, memory changes, increased risk of cancer, tremors, and other neurophysiological effects in populations near base stations.”* <http://www.nrcresearchpress.com/doi/pdf/10.1139/A10-018?src=recsys&>

Neurobehavioral effects among inhabitants around mobile phone base stations *“The prevalence of neuropsychiatric complaints as headache (23.5%), memory changes (28.2%), dizziness (18.8%), tremors (9.4%), depressive symptoms (21.7%), and sleep disturbance (23.5%) were significantly higher among exposed inhabitants than controls...”* <https://www.ncbi.nlm.nih.gov/pubmed/16962663>

Epidemiological Evidence for a Health Risk from Mobile Phone Base Stations *“We found that eight of the 10 studies reported increased prevalence of adverse neurobehavioral symptoms or cancer in populations living at distances < 500 meters from base stations.”* <https://goo.gl/Zz6dhk>

Peer-reviewed, published science shows RFR harms nature

The US Department of the Interior states RFR threatens birds, and criticizes the FCC’s radiation

guidelines, stating, “*the electromagnetic radiation standards used by the Federal Communications Commission (FCC) continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today.*” Two hundred forty-one bird species suffer mortality risk from both tower collisions and from exposure to the radiation towers emit. This includes birds that are endangered or threatened, Birds of Conservation Concern, migratory birds, and eagles. Studies of radiation impacts on wild birds documented nest abandonment, plumage deterioration and death. Birds studied included House Sparrows, White Storks, Collared Doves, and other species. Studies in laboratories of chick embryos documented heart attacks and death. http://www.ntia.doc.gov/files/ntia/us_doi_comments.pdf

Scientists in Germany studied tree damage in relation to wireless radiation from 2006-2015. They monitored, observed and photographed unusual or unexplainable tree damage, and measured the radiation which the trees were exposed. “*The aim of this study was to verify whether there is a connection between unusual (generally unilateral) tree damage and radio frequency exposure.*” They found significant differences between the damaged side of a tree facing a phone mast and the opposite side, as well as differences between the exposed side of damaged trees and all other groups of trees in both sides. The scientists concluded, “*Statistical analysis demonstrated that electromagnetic radiation from mobile phone masts is harmful for trees.*” <https://www.ncbi.nlm.nih.gov/pubmed/27552133?dopt=Abstract#>

The following studies show insects are harmed by radiation:

Food collection and response to pheromones in an ant species exposed to electromagnetic radiation found exposure to radiation caused colony deterioration and affected social insects’ behavior and physiology. <https://www.ncbi.nlm.nih.gov/pubmed/23320633>

Oxidative and genotoxic effects of 900 MHz electromagnetic fields in the earthworm concluded radiation caused genotoxic effects and DNA damage in earthworms. <https://www.ncbi.nlm.nih.gov/pubmed/?term=23352129>

Mobile Phone Induced Honey Bee Worker Piping. The study abstract states, “*The worldwide maintenance of the honeybee has major ecological, economic, and political implications.*” Cell phone RFR was tested for potential effects on honeybee behavior. Handsets were placed in the close vicinity of honeybees and the sound made by the bees was recorded and analyzed. The information revealed that active cell phone handsets induced the bees worker piping signal. “*In natural conditions, worker piping either announces the swarming process of the bee colony or is a signal of a disturbed bee colony.*” <https://link.springer.com/article/10.1007/s13592-011-0016-x>

The following are observations by International scientists of RFR effects on nature :

- *“Migratory birds -- incredibly important to the global economy and for the ecological services they provide -- now appear to be negatively affected by non-ionizing radiation.”* Dr. Albert Manville, Adjunct Professor, Johns Hopkins University; Senior Wildlife Biologist, U.S. Fish & Wildlife Service (FWS), Emeritus/Retired
- *“Man-made electromagnetic fields impact all living organisms, acting first on the unit membrane. We must reduce our dependence on 'wireless' technologies, reduce the numbers of masts (i.e., cell towers), of Wi-Fi apparatus, of cordless phones and so on, and clearly indicate, in public spaces, the intensity of the ambient electromagnetic field.”* Prof. Marie-Claire Cammaerts, PhD., Free University of Brussels, Faculty of Science, Belgium.

<https://www.emfscientist.org/index.php/science-policy/expert-emf-scientist-quotations>

Why we cannot rely on the Federal Communications Commission: PG&E has expanded from providing basic gas and electric services to running a RFR mesh telecommunications network. The safety of that network is based on the reliance on the FCC. FCC proceedings 13-84 and 03-137 were initiated to determine whether their RFR exposure limits and policies created in 1996 need to be reassessed. These proceedings which were filed in 2013 remain incomplete. The federal government has taken sole responsibility for the radiation safety of personal wireless service deployment, however, no federal agency is acting responsibly, or being accountable for protecting the public and the environment from the health effects of RFR. The science has evolved greatly since 1996 meanwhile wireless devices have been widely deployed, as well as forced upon the public.

The FCC is a regulatory captured agency: Investigative journalist Norm Alster wrote: [Captured Agency: How the Federal Communications Commission is dominated by the industries it presumably regulates.](#) published by Harvard University. Alster calls on the FCC to acknowledge there may be wireless health risks, to back off wi-fi promotion, to acknowledge children and pregnant women may be especially vulnerable, and more. He writes, *“Personally, I don’t believe that just because something can be done it should heedlessly be allowed. Murder, rape and Ponzi schemes are all doable but subject to prohibition and regulation. Government regulators have the responsibility to examine the consequences of new technologies and act to at least contain some of the worst. Beyond legislators and regulators, public outrage and the courts can also play a role but these can be muffled indefinitely by misinformation and bullying.”* http://ethics.harvard.edu/files/center-for-ethics/files/capturedagency_alster.pdf

What other measures should be taken to ensure PG&E satisfies its obligation to provide safe service? An opportunity for discovery is needed. *Has PG&E's records of temperature and voltage readings from smart meters been investigated in areas with catastrophic fires? Is it safe to remove meter readers who are trained to look for safety problems including gas leaks? Is it safe to put RFR transmitters on gas lines? Etc...*

Conclusion: The Commission should allow discovery, and include hearings on smart meter health, safety, and environmental impacts, to prioritize delivery of safe, reliable gas and electric service at reasonable rates. Network thanks the Commission for this opportunity to comment.

Dated: February 13, 2019 at Sebastopol, California.

Respectfully submitted,

/s/_____

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