Comments of Rachel Shub on HHS request for information on "Public Experiences and Reported Potential Adverse Health Effects", 10/20/2026

Paragraphs are enumerated according the RFI's outline which is reproduced as relevant. I defer to consumer advocates for questions I have not addressed.

2. I am an individual consumer, a retired US government lawyer, who has (a) experienced the direct effects and injury of RF/EMF (b) become informed (via personal experience in West Viriginia) of the shocking inadequacy of outdated US federal health standards coupled with inappropriate Federal overreach into local decision-making with respect to the construction of cell towers in residential neighborhoods, via the Telecommunications Act of 1996, which is at odds with the intent and spirit of the 11th Amendment of our Constitution..

Exposure Standards and Risk Assessment

5. What existing national and international exposure standards, guidelines, or regulatory frameworks should federal health agencies consider when evaluating the potential adverse health effects of human exposure to RF/EMF?

Despite our relative wealth and extensive scientific community, the USG has lagged decades behind European countries in addressing potential adverse effects of human exposure. Since industries and academics always push the USG to undertake Transatlantic "HARMONIZATION" HHS and FCC should select and publish specific French, German and other appropriate safety standards for public comment and meanwhile provide guidance that, pending a final regulation, these foreign standards may be invoked by residents opposing new installation of RF/EMF sources in residential/recreational neighborhoods or schools without running afoul of the FCC law.

n. What scientific, technical, or regulatory changes by federal health agencies, if any, would improve the assessment, disclosure, and regulation of wireless radiation exposure?

A. **telecoms providers should be required to share their RF reports with the public**
B. **federal standards and incentives should be provided to develop products that mitigate the effects of cell phones and home Wifi,**
C. **develop a system to inform local governments of cumulative RF/EMF exposure in a neighborhood, starting with a public registry of cell network sites (FOIAs should not be required for any of this), and including ways to measure and monitor exposure over time. This should also include exposure to power lines (e.g. high voltage lines near homes and schools).**

D. **provide guidance to states and neighborhoods on the types of connectivity best suited to their neighborhoods that also minimizes RF/EMF exposure**
E. **provide that in evaluating applications for cell towers and similar sources of RF/EMF, local governments SHOULD or at least MAY consider adverse heath effects of RF/EMF in largely residential areas or those with vulnerable populations –children, seniors, epileptics, etc. without running afoul of federal law.**
F. **provide for state and local governments to be able to use foreign studies and standards when considering proposals to construct cell towers etc in residential, recreational and academic neighborhoods and buildings.**
G. **provide that all safety studies for cell phones need to assume being next to the body (including hands, chest, hips etc specifically).**
H. **provide regulatory incentives to MAKE A SAFER PHONE—and meanwhile require cell phones to have a switch to minimize exposure for people who cannot turn off phones at night due to family commitments/risks etc. (not me but many people I know)**
I. **provide for incentives for homes to be hardwired or else ways for wifi to be mitigated in the house.**

o. Is additional research needed to develop, test, and evaluate the effectiveness of procedures and techniques for minimizing exposure to electronic product radiation? Where are the largest gaps, if any, in knowledge? What research is needed to appropriately evaluate current or future national and international exposure standards, guidelines, or regulatory frameworks.

Yes, but private companies may have already started on this research. Many products are on the market to somehow "neutralize" RF/EMF effects of cell phones, home Wi-Fi etc, but while there are many anecdotes, there is no way for consumers to know for sure whether they make a marginal difference or not. There are also various wall paints, textiles, electrical contrivances etc. There needs to be a whole hearing just on these.

p. How, if at all, should a classification system account for exposure-related characteristics, including operating frequency, power density, specific absorption rate (SAR), electric- and magnetic-field strength, modulation and pulse characteristics, duty cycle, beamforming, simultaneous exposure to multiple frequencies, duration of exposure, distance from the source, proximity to the body, and cumulative exposure over time?

Failure to take all this into account should NOT be used as a barrier to even trying. There are certain principles that should be assumed, and the consumer needs to be informed of choices. Principles: (1) The SAR assumed should be for

children. (2) Distance from the source for phones are obvious—next to the body. (3) simultaneous exposure to multiple frequencies, i.e. increasing density, is a given in modern life and this density needs to be measured/addressed. Eg. airports, public transportation, smart phones, home printers, etc (4) cumulative exposure over some period of time cannot be ignored.

6. What scientific evidence exists about potential adverse health effects caused by current exposure limits?

There is a plethora of evidence that apparently gets ignored by captive agencies. For example, as early as 2011, the WHO's International Agency for Research on Cancer classified RF/EMF as possibly carcinogenic to humans. European and other foreign scientists have had the funds to do the research that would get Americans professionally ostracized. In fact, the effect of electrical fields more broadly on the body has been largely ignored by the government and medical community (other than for soldering bones or rebooting the heart via debrillation or electrical cardioversion). See *The Invisible Rainbow* by Arthur Firstenberg, the best seller "*The Body Electric* by Becker and Selden, *Dirty Electricity* by Samuel Milham, etc.

Measuring Human Exposure and Public Health Surveillance

7. What scientific methods are currently available for accurately characterizing individual and population-level RF radiation exposure?

Again, whatever shortcomings may exist in measurement should not be an impediment to placing much needed constraints on vulnerable populations. With AI able to identify current methods and identify others, THERE IS NO EXCUSE FOR DELAY.

8. What, if any, improvements in exposure assessment methodologies are needed to better evaluate real-world exposure conditions?

Improvements should aim at current and likely future exposure and density (smart appliances, conditions of major cities, use of satellites, etc)

9. What, if any, technical and exposure-related information should be disclosed to consumers, residents, workers, schools, healthcare providers, and local governments?

At a minimum: ALL INFORMATION that is provided to governments or regulatory agencies anywhere in the world should be provided to American consumers in any easy to access format. Also, local governments should be provided with information on how to measure and assess local exposures.

10. What data sources or surveillance systems currently exist to monitor potential adverse health effects associated with RF radiation exposure? Should additional data sources or surveillance systems be developed? Please discuss the benefits and challenges of the following data sources and surveillance systems, as relevant:

a. disease registries.

b. occupational monitoring.

c. environmental monitoring.

d. longitudinal cohort studies.

e. biomonitoring.

f. adverse event reporting.

g. disease or illness clusters.

h. Other.

11. Should exposure assessment or risk evaluation differ for sensitive populations such as those noted below? Please explain.

a. children.

b. pregnant women.

c. older adults.

d. individuals with implanted medical devices.

e. workers with elevated occupational exposure.

f. individuals with preexisting medical conditions.

g. Other populations that may uniquely experience potential adverse health effects in response to RF radiation.

Exposure assessment and risk evaluation for all the above populations should be assumed and carried forward into all policy making unless a specific exception applies for national security eg. For (g): I understand that exposure is injurious to those suffering from epilepsy and other neurological disabilities.

These are the CANARIES IN COALMINE, and their vulnerabilities should be the basis for regulating in normal circumstances.

Existing Evidence

12. What scientific evidence exists regarding potential adverse health effects associated with RF radiation exposure at levels below current federal exposure limits?

13. According to scientific evidence, how do the technologies below affect cumulative exposure patterns?

a. 5G.

b. 6G.

c. Wi-Fi.

d. Satellite-based communications.

e. Internet of Things (IoT).

f. Wearable technologies.

g. Smart homes/appliances.

h. Smart cities.

i. Autonomous vehicles.

j. Wireless medical devices.

k. Communication enabled smart meters.

These are all good questions, and helpfully identifies the huge number of sources, but getting definitive answers to each type should not delay addressing the obviously inadequate current Federal regulatory framework. AI can help devise industry-specific strategies.

14. What scientific evidence exists regarding potential adverse environmental effects associated with RF radiation?

See e.g., the Spanish studies cited by Firstenberg in *The Invisible Rainbow*. Apparently, academics and schoolchildren can devise scientific experiments to show the effects of a cellphone battery on bee populations, how RF/EME affects bird nest populations on church towers, and the sides of a tree directly exposed versus not exposed. Political will is needed to push US agencies and the private sector to do this more methodically and comprehensively—but we should not wait for some definitive study because the technology is constantly evolving.

15. What types of scientific evidence should be considered when evaluating RF exposure associated with wireless infrastructure? Please comment on:

a. proximity to homes, schools, childcare facilities, healthcare facilities, and/or workplaces.

b. cumulative neighborhood exposure.

c. antenna density.

d. small-cell deployment.

e. livestock.

Information is desperately needed for residents on the relative effects of all these situations.

Federal Research Priorities

16. What are the highest priority research gaps regarding EMF and RF radiation and public health that the federal health agencies should address?

The gaps are huge, but agencies should build on information from Europe, adapted to US circumstances (e.g. our topography, less zoning, greater use of cell towers in population-dense areas, less underground electrical wiring etc), *while focusing on how to develop special approaches to homes and schools as the top priority.*

17. How can federal health agencies improve coordination of EMF and RF radiation research? Please comment on potential roles for federal health agencies including, but not limited to:

a. HHS Food and Drug Administration (FDA).

b. HHS National Institutes of Health (NIH).

c. HHS Centers for Disease Control and Prevention (CDC).

FCC should be required to defer to findings by HHS and EPA with respect to health and environment effects. Current FCC standards are antiquated, obsolete and harming the public.