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Comments of Susan Foster, Rocky Mountains for Safe Technology

HHS Request for Information on Electromagnetic Fields, Radiofrequency Radiation, and Wireless Radiation Exposure; Federal Register Document No. 2026-19252

These comments are submitted by Susan Foster on behalf of Rocky Mountains for Safe Technology (RMST). I am the Chief Executive Officer of this 501(c)(3) dedicated to information and education with respect to wireless radiation safety. We are located in Boulder County, Colorado and may be reached at PO Box 1444, Lyons, CO 80540.

RMST appreciates HHS's request for information concerning electromagnetic fields, radiofrequency radiation, and wireless radiation exposure. I urge the Department to use this proceeding to establish a transparent, coordinated public-health response that addresses cancer and non-cancer outcomes, sensitive populations, occupational exposures, and the increasingly complex exposure conditions encountered in daily life.[1]

These comments focus on the framework for that evaluation.

1. Address the unresolved federal scientific and regulatory questions

On August 13, 2021, the D.C. Circuit held that the FCC had failed to provide a reasoned explanation for its determination that its RF guidelines adequately protect against harmful effects unrelated to cancer. The court identified evidence concerning reproductive and neurological problems, including memory and motor abilities, and found inadequate

[1] U.S. Department of Health and Human Services, "Request for Information on Electromagnetic Fields (EMFs), Radiofrequency (RF) Radiation, and Wireless Radiation Exposure," September 21, 2026, Federal Register document 2026-19252, https://www.federalregister.gov/documents/2026/09/21/2026-19252/request-for-information-on-electromagnetic-fields-emfs-radiofrequency-rf-radiation-and-wireless.

reasoning concerning children, long-term exposure, pulsation or modulation, technological developments, portable-device testing, and environmental effects.[2]

More than five years after the August 13, 2021 remand, the unresolved federal response remains a serious public-health accountability concern. On August 26, 2026, the D.C. Circuit ordered the FCC to respond within 30 days to a mandamus petition challenging its delay.[3] The FCC's subsequent solicitation of updated comments is welcome, but collecting additional information is not the same as completing the reasoned analysis required by the remand. HHS should help resolve the underlying scientific questions through a substantive, transparent assessment that identifies the evidence considered, addresses significant contrary findings, and explains remaining uncertainties.

The court explained that unexplained FDA assurances—and the silence of other expert agencies—could not substitute for reasoned analysis.[4] HHS should therefore provide an evaluation that identifies the evidence considered, explains its interpretation, addresses significant contrary findings, and specifies remaining uncertainties.

The court did not decide that RF exposure causes the alleged harms, and it did not require lower numerical limits. Nor did its rejection of the cancer-related challenge foreclose further cancer research or assessment. HHS should evaluate both cancer and non-cancer evidence within the broader scope of this request.[5]

2. Study real-world exposure, including pulsed and modulated signals, and challenge the outdated "thermal-only" paradigm.

HHS should support studies that characterize more than carrier frequency and time-averaged exposure, and challenge the long-held, outdated construct that harm only occurs at the level of heating; ergo, RF/EMF in the non-thermal range is harmless.

Early standards focused on preventing excessive heat loading from RF and microwave energy; that approach later became the foundation for the FCC's exposure limits. The

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[2] *Environmental Health Trust v. FCC*, No. 20-1025, slip op. at 8–11, 19–22, 30–31 (D.C. Cir. Aug. 13, 2021).

[3] *Environmental Health Trust v. FCC*, No. 20-1025, slip op. at 30–31 (D.C. Cir. Aug. 13, 2021); *In re Children's Health Defense, et al.*, No. 26-1121, order at 1 (D.C. Cir. Aug. 26, 2026).

[4] *Environmental Health Trust v. FCC*, No. 20-1025, slip op. at 14–17 (D.C. Cir. Aug. 13, 2021).

[5] *Environmental Health Trust v. FCC, No. 20-1025, slip op. At 25–27, 30–31 (D.C. Cir. Aug. 13, 2021).*

important distinction is between *protecting against a known heating hazard* and *demonstrating protection against every other biological effect.*[6]

Protection against excessive heating is not proof of protection against all biological harm. The FCC's RF limits rest on a thermal framework developed from older exposure standards and short-duration animal experiments involving 5 monkeys and 8 rats; compliance with those limits does not resolve the adverse non-thermal effects documented in the accompanying scientific evidence. HHS should reject the substitution of a heating threshold for a comprehensive public-health assessment. Neurological, reproductive, developmental, genotoxic, and cancer findings must be evaluated on their own evidence, with attention to exposure duration, pulsation, modulation, and susceptible populations. A standard's age and institutional acceptance do not establish its adequacy. Repeating assurances of safety is not a substitute for explaining how the evidence supports them.[7]

Time-averaged exposure is useful for assessing thermal load, but it is not a complete description of a pulsed signal. Just as a trip's average speed can obscure speeding through a school zone – an obvious hazard, an RF exposure average can obscure brief peaks and their timing. HHS should evaluate peak exposure, pulse duration, repetition rate, modulation, and recovery intervals alongside average exposure, and determine how these characteristics affect biological responses.

Pulsed and modulated RF exposures deserve explicit attention. The FCC remand identified the inadequacy of the agency's explanation concerning pulsation and modulation; HHS should not leave these questions implicit in a general discussion of RF exposure.[8] Research should compare relevant signal types and examine repeated exposure, delayed effects, and recovery periods.

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[6] Richard A. Tell, *An Analysis of Radiofrequency and Microwave Absorption Data with Consideration of Thermal Safety Standards* (Las Vegas, NV: U.S. Environmental Protection Agency, Office of Radiation Programs, 1978), https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=9101NRM7.TXT

[7] International Commission on the Biological Effects of Electromagnetic Fields (ICBE-EMF), "Scientific Evidence Invalidates Health Assumptions Underlying the FCC and ICNIRP Exposure Limit Determinations for Radiofrequency Radiation: Implications for 5G," *Environmental Health* 21 (2022): article 92, https://doi.org/10.1186/s12940-022-00900-9; *Environmental Health Trust v. FCC*, No. 20-1025, slip op. at 5–6, 14–18, 30–31 (D.C. Cir. Aug. 13, 2021).

[8] *Environmental Health Trust v. FCC, No. 20-1025, slip op. at 25–27, 30–31 (D.C. Cir. Aug. 13, 2021).*

Time-averaged exposure alone is insufficient to evaluate non-thermal biological effects of pulsed or modulated RF radiation. Averaging can obscure differences in peak intensity, pulse duration, repetition rate, and intervals between pulses, even when signals have the same average exposure. HHS should evaluate these characteristics alongside average exposure and determine whether existing assessment methods adequately capture the adverse biological effects documented in the accompanying scientific evidence.

RF exposures should also be distinguished from power-frequency and other electromagnetic fields. When multiple types of fields occur together, researchers should characterize them separately rather than attribute findings to an undifferentiated "EMF" exposure.

3. Strengthen epidemiology and public-health surveillance

HHS should prioritize prospective epidemiologic studies with improved individual exposure assessment, adequate follow-up, and meaningful clinical outcomes. Studies should distinguish exposure from base stations and other infrastructure from personal-device use, screen time, and behavioral factors.

Long-term and repeated exposure should be evaluated without assuming that either a single brief experiment or a one-time exposure measurement captures years of changing conditions. Research should account for occupational and residential exposure relevant

Individual reports and apparent case clusters cannot establish causation by themselves, but they can reveal patterns, unusual clinical findings, and serious questions warranting investigation.

The example of a cluster of illness in Ripon, CA described below illustrates the need for a reporting mechanism backed by an interdisciplinary team with expertise in epidemiology, clinical and occupational medicine, environmental health, and RF exposure assessment. Evaluations should include standardized symptom and exposure-history surveys; verification of diagnoses and relevant medical records, with informed consent; clinically appropriate testing and research-based biomarker assessment where scientifically justified; and independent characterization of RF exposure, including frequencies, field

strengths, modulation and pulsing characteristics, temporal variability, and cumulative exposure patterns.

Investigators should assess other environmental and occupational exposures, use appropriate comparison populations where feasible, and document reported changes following relocation, equipment modification, or antenna removal.

HHS should designate a responsible agency, establish transparent criteria and timelines for follow-up, protect participants' privacy, communicate findings and uncertainties to affected communities, and provide a reasoned explanation when further investigation is declined. Reports of serious illness, deaths, residential displacement, or impaired emergency-response capability should not disappear into an administrative void simply because affected communities lack the resources to conduct their own epidemiological studies.

The absence of a completed causal study should define the questions investigators must answer – not become a reason to abandon affected communities.

Cluster of Illness Surrounding a Sprint Cell Tower in Ripon, CA:

- Ripon, California, illustrates why reported cancer groupings near cellular base stations warrant comprehensive public-health investigation. In 2019, reporting identified multiple cancer diagnoses among students and employees associated with Weston Elementary School where a Sprint cell tower had been placed on school grounds, together with additional cases among nearby neighborhood children. After approximately 10 years of continual RF radiation emissions, Sprint disconnected the campus tower while arranging its relocation.[9] Mason Ferrulli, a Weston student whose cancer diagnosis punctuated the parents' concerns, died in July 2024 after a prolonged battle with cancer.[10] These reports do not establish that RF exposure alone caused the cancers, but they warrant systematic review of the affected population, diagnoses, exposure histories, and potential environmental contributors including chemical-contamination concerns also documented in Ripon. An interdisciplinary team with expertise in epidemiology, clinical and

[9] Ken Carlson, "Ripon School District Continues to Receive Pressure," *The Modesto Bee*, March 14, 2019; Environmental Health Trust, "California School District Turns Off Radiation From School Cell Tower After Fourth Student Has Cancer," April 2, 2019 (reporting that transmissions had ceased as of March 28, 2019).
[10] "Mason Passes Away," *Manteca Bulletin*, July 23, 2024, https://www.mantecabulletin.com/news/local-news/mason-passes-away/.

occupational medicine, environmental health, and RF exposure assessment dispatched by HHS could have evaluated a potential synergistic effect between radiofrequency radiation from the tower and the chemical contaminant found in the neighborhood in question.

The Ripon example illustrates the need for a reporting mechanism backed by an interdisciplinary team with expertise in epidemiology, clinical and occupational medicine, environmental health, and RF exposure assessment.

HHS should evaluate each grouping using a clearly defined population and time period, verified diagnoses where available, appropriate comparison data, detailed exposure histories, and assessment of alternative causes and co-exposures. Reports of improvement away from a location and recurrence on return should be preserved and evaluated prospectively where feasible. Compliance with an existing RF limit answers a regulatory measurement question; it does not replace a public-health investigation or provide any measure of reassurance of safety.

4. Include fertility, pregnancy, and paternal exposure

Reproductive-health research should encompass both maternal and paternal exposure. Relevant outcomes include sperm concentration, motility, viability, morphology, DNA integrity, reproductive hormones, fertility, implantation, pregnancy loss, placental development, fetal growth, and offspring health.

Paternal exposure should not be excluded merely because a study does not identify a specific cause of miscarriage. Experimental research has reported sperm changes and adverse fetal or placental outcomes after paternal exposure. For example, Wang and colleagues reported impaired sperm quality, smaller litters, reduced fetal weight, and reduced placental efficiency in mice following paternal RF exposure. The study Chronic Paternal Wi-Fi RF-EMR Exposure Impairs Placental Efficiency and Fetal Growth: Association with Sex-Dependent Histone Modification Patterns in Mice did not establish a miscarriage rate or equivalent human risk, but it illustrates why research must extend beyond pregnancy loss alone.[11]

HHS should distinguish human occupational findings, other human observational evidence, animal experiments, and laboratory sperm studies while evaluating what each

[11] Jun Wang et al., "Chronic Paternal Wi-Fi RF-EMR Exposure Impairs Placental Efficiency and Fetal Growth: Association with Sex-Dependent Histone Modification Patterns in Mice," *Ecotoxicology and Environmental Safety* 323 (2026): article 120751, PDF pp. 2–4, 7, 10, https://doi.org/10.1016/j.ecoenv.2026.120751.

contributes to evaluating pre-pregnancy, pregnancy, post-pregnancy and child developmental risks associated with wireless radiation.

5. Give brain, neurological, and functional outcomes explicit attention
Research priorities should include memory, attention, concentration, executive function, sleep, mood, motor function, and occupational performance. Reports of uncharacteristic depression, anger, or irritability should be documented alongside cognitive and sleep concerns rather than automatically separated from the broader clinical picture.

Studies should incorporate baseline information, longitudinal follow-up, and objective assessments where appropriate. Reported symptoms, neurobehavioral findings, and imaging abnormalities should be distinguished and explained in the context of the subjects' symptoms, if possible.

Base-station studies reporting associations with memory complaints, depressive symptoms, sleep disturbance, and concentration difficulties warrant substantive evaluation.[12] For workers in safety-critical occupations, changes in cognition, sleep, or performance also raise public-safety questions that deserve targeted investigation.

6. Protect children and other potentially susceptible populations
HHS should evaluate whether existing assessment methods adequately address children, pregnancy, older adults, workers with elevated exposure, people with implanted devices, and people with preexisting conditions and compromised immune systems. These populations should not be assumed to share identical exposure patterns or susceptibility.

For children, research should address developmental stage, exposure over many years, learning and memory, sleep, and the changing mix of wireless sources in schools and homes. Device-compliance testing should also be evaluated against actual patterns of use, including close-to-body use. HHS should specifically examine cumulative exposure across children's daily environments, including repeated exposure to Wi-Fi routers and connected devices at school together with other RF sources such as a classroom full of computers, each with its own antenna.

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[12] G. Abdel-Rassoul et al., "Neurobehavioral Effects Among Inhabitants Around Mobile Phone Base Stations," *Neurotoxicology* 28, no. 2 (2007): 434–440, https://doi.org/10.1016/j.neuro.2006.07.012; E. A. Navarro, J. Segura, M. Portolés, and C. Gómez-Perretta, "The Microwave Syndrome: A Preliminary Study in Spain," *Electromagnetic Biology and Medicine* 22, no. 2 (2003): 161–169, https://doi.org/10.1081/JBC-120024625.

Assessment should account for developmental vulnerabilities, exposure timing and duration, and repeated exposures over years—not simply evaluate each device in isolation. Research should determine whether these combined exposure patterns affect learning, memory, sleep, or other developmental outcomes, and whether current assessment methods adequately protect children.

7. Deliver transparent findings and practical recommendations

HHS should publish its review methods, funding sources, author affiliations, and relevant conflicts of interest; explain study inclusion and exclusion; and evaluate adverse, null, and mixed findings consistently. Expert judgment should be supported by analysis rather than institutional authority alone.

The Department should establish a public timetable, coordinate FDA, NIH, CDC, and other relevant agencies, and identify research priorities with measurable milestones. Environmental findings should inform that coordination where relevant to human health and ecosystem protection.

Finally, HHS should provide clear public information about exposure sources, uncertainties, and reasonable exposure-reduction options. The D.C. Circuit observed that the FCC did not need a replacement numerical limit to provide additional public information or consider precautions.[13]

A complete, new standard need not be the prerequisite for better disclosure, stronger surveillance, and appropriate interim public-health guidance including precautions.

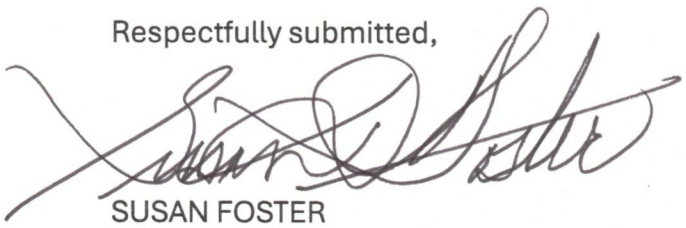
8. MicrowaveNews – an independent, investigative voice scrutinizing federal RF radiation-exposure policy, industry influence and governmental assurances of safety; mandatory reading.

Louis Slesin, Ph.D., editor and publisher of Microwave News, has devoted more than four decades to independent investigative reporting on the potential health and environmental effects of electromagnetic fields and radiation, and on the institutions charged with protecting the public. His reporting has scrutinized federal radiofrequency-exposure policy, questioned official assurances of safety including those coming from HHS, and raised concerns about industry influence and regulatory independence. RMST will be submitting a compilation spanning more than four decades of this reporting. I urge HHS to examine this

[13] *Environmental Health Trust v. FCC*, No. 20-1025, slip op. at 18–19 (D.C. Cir. Aug. 13, 2021).

extensive record alongside the underlying scientific studies, agency documents, and correspondence, and to investigate whether industry influence, conflicts of interest, or regulatory failures have compromised the assessment and communication of potential health risks. This submission deserves a substantive, evidence-based response – not dismissal because its findings challenge established agency positions. HHS must make the protection of public health, rather than the protection of commercial interests, the governing priority of its review.

Respectfully submitted,



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