ICBE–EMF INTERNATIONAL COMMISSION ON THE BIOLOGICAL EFFECTS OF ELECTROMAGNETIC FIELDS

Before the Federal Communications Commission Washington DC 20554

In the Matter of: Delete, Delete, Delete
Implementing Executive Order 14192 of January 31, 2025

GN Docket No. 25-133

COMMENTS OF

International Commission on the Biological Effects of Electromagnetic Fields

April 11, 2025

Submitted by: Ronald Melnick and Elizabeth Kelley

The International Commission on the Biological Effects of Electromagnetic Fields (ICBE-EMF) is challenging the safety of current wireless exposure limits to radiofrequency radiation (RFR) and is calling for an independent evaluation. ICBE-EMF is an international consortium of scientists, doctors and researchers with expertise and peer-reviewed publications on the biological and health effects of electromagnetic fields including wireless RF radiation. This includes wireless devices such as cell phones, cordless phones and other devices; and Wi-Fi and cell towers that emit radiofrequency (RF) radiation.

The proposed rules include:

1. Small Cell Order - Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Inv., FCC 18-133, 33 FCC Rcd. 9088 (2018). Withdraw rules amendments contained in Appendix A and overturn interpretive rules embodied in the Declaratory Ruling portion (¶¶30-102, 33 FCC Rcd at 9100- 9141).

2. Moratoria Order - Declaratory Ruling in Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Inv., FCC 18-111, 33 FCC Rcd. 7705 (2018). Overturn interpretive rules embodied in Declaratory Ruling portion (¶¶140-168, 33 FCC Rcd at 7775-7791).

3. One-Touch Make Ready Order – Third Report and Order in Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Inv., FCC 18-111, 33 FCC Rcd. 7705 (2018), including (¶¶5-136, 33 FCC Rcd 7707-7774) and (¶¶137-139, 33 FCC Rcd at 7774-7775)

4. Middle Class Tax Relief and Jobs Act (2012) (47 USC §1455), Section 6409 initial rules 2014 10 which expands perimeter around a tower to 6 feet in diameter

5. Middle Class Tax Relief and Jobs Act (2012) (47 USC §1455), Section 6409 in 202011 which expands perimeter around a tower to 30 feet in diameter

6. NEPA 1986 satellite categorical exclusion.

We urge the FCC to set its top priority on the protection of public health and the environment before it considers deleting federal rules that apply to wireless communications devices and infrastructure. The threshold dose that FCC used to establish human exposure limits is inadequate, does not consider hundreds of studies that show health effects below the exposure limits, and ignores studies reporting biological harm to the environment. This is an urgent call for action.

In 2021, the D.C. Circuit Court of Appeals issued a remand order on the FCC emission limits, requiring it to provide a reasoned explanation for not updating its RF radiation emission limits which were last set in 1996 when only a fraction of the cell towers and cell phones that we have today were in existence. The order stated that FCC had failed to respond to "record evidence that exposure to RF radiation at levels below the Commission's current limits may cause negative health effects unrelated to cancer." In doing so, the FCC was required to examine the effects of long-term exposure to humans and the environment, particularly to children. The Court found that the FCC did not convene a committee or produce a report. The court order is still outstanding, and, to date, the FCC has not complied.

Therefore, we do not support deregulatory initiatives that would facilitate and encourage American firms to invest in modernization and expansion of wireless networks and innovation at this time. FCC, in consultation with the Food and Drug Administration, should responsibly address the urgent need to protect the population from health risks due to exposure to RF radiation before adopting these proposed rules.

On October 18, 2022, ICBE-EMF published a paper in the journal ***Environmental Health,*** Scientific evidence invalidates health assumptions underlying the FCC and ICNIRP exposure limit determinations for radiofrequency radiation: implications for 5G", that demonstrates how the U.S. Federal Communications Commission (FCC) and the International Commission on Nonionizing Radiation Protection (ICNIRP) have ignored hundreds of scientific studies documenting adverse health effects at exposures below the threshold dose claimed by these agencies, which was used to establish human exposure limits. The authors argue that the threshold, based on science from the 1980s – before cell phones were ubiquitous – is wrong, and these exposure limits based on this

threshold do not adequately protect workers, children, people with electromagnetic hypersensitivity, and the public from exposure to the nonionizing radiation from wireless data transmission.

"Many studies have demonstrated oxidative effects associated with exposure to low-intensity RFR, and significant adverse effects including cardiomyopathy, carcinogenicity, DNA damage, neurological disorders, increased permeability of the blood-brain barrier, and sperm damage," explains Dr. Ronald Melnick, ICBE-EMFs Chair and a former senior toxicologist with the U.S. National Toxicology Program at the National Institute of Environmental Health Sciences at the time. "These effects need to be addressed in revised and health-protective exposure guidelines. Furthermore, the assumption that 5G millimeter waves are safe because of limited penetration into the body does not dismiss the need for health effects studies.

ICBE-EMF advises that an independent evaluation based on scientific evidence with attention to the knowledge gained over the past 25 years is needed to establish lower exposure limits.

The list of the false assumptions reported in ICBE's 2022 paper is shown here:

A) Effects of RF radiation at exposures below the putative threshold SAR of 4 W/kg

Assumption 1) There is a threshold exposure for any adverse health effect caused by RF radiation; in the frequency range of 100 kHz to 6 GHz it is a whole-body exposure that exceeds an SAR of 4 W/kg. Any biological effect of RF radiation above the threshold exposure is due to tissue heating.

Assumption 2) RF radiation is incapable of causing DNA damage other than by heating; there is no mechanism for non-thermal DNA damage.

Assumption 3) Two to seven exposures to RF radiation for up to one hour duration are sufficient to exclude adverse effects for any duration of exposure including chronic exposures.

Assumption 4) No additional effects would occur from RF radiation with co-exposure to other environmental agents.

B) Factors affecting dosimetry

Assumption 5) Health effects are dependent only on the SAR value; carrier wave modulations, frequency, or pulsing do not matter except as they influence the SAR.

C) Human brain cancer risk

Assumption 6) The multiple human studies that find associations between exposure to cell phone RF radiation and increases in brain cancer risk are flawed because of biases in the published case-control studies, and because brain cancer rates have remained steady since the time that use of wireless communication devices became widespread.

D) Individual variations in exposure and sensitivity to RF-EMF

Assumption 7) There are no differences among individuals, including children, in the absorption of RF-EMF and susceptibility to this radiation.

Assumption 8) There are no differences among individuals in their sensitivity to RF radiation-induced health effects.

E) Applied safety factors for EMF-RF workers and the general population

Assumption 9) A 50-fold safety factor for whole body exposure to RF radiation is adequate for protecting the general population to any health risks from RF radiation.

Assumption 10) A 10-fold safety factor for whole body exposure to RF radiation is adequate for protecting workers to any health risks from RF radiation.

Assumption 11) Exposure of any gram of cube-shaped tissue up to 1.6 W/kg, or 10 grams of cube-shaped tissue up to 2 W/kg, (duration not specified) will not increase the risk of that tissue to any toxic or carcinogenic effects in the general population.

Assumption 12) Exposure of any gram of cube-shaped tissue up to 8 W/kg, or 10 grams of cube-shaped tissue up to 10 W/kg, (duration not specified) will not increase the risk of that tissue to any toxic or carcinogenic effects in workers.

F) Environmental exposure to RF radiation

Assumption 13) There is no concern for environmental effects of RF radiation or for effects on wildlife or household pets.

G) 5G (5th generation wireless)

Assumption 14) No health effects data are needed for exposures to 5G; safety is assumed because penetration is limited to the skin ("minimal body penetration").

Further, the International EMF Scientist Appeal, a petition submitted to the United Nations and signed by more than 240 scientists who have published over 2,000 papers on EMF, biology, and health, states that the current human exposure radiofrequency radiation exposure guidelines set by the FCC and other national and international organization are based on avoiding heating effects and do not adequately protect against known health risks that do not involve heat that can cause long-term health risks.

On April 25, 2025, *Environment International* recently published a new systematic review of laboratory animals exposed to radiofrequency radiation partially funded by the World Health Organization, concluding that there is high certainty of the evidence linking cell phone radiofrequency (RF) radiation to two types of cancer in animals. gliomas in the brain and malignant schwannomas in the heart. Notably, the same types of tumors have also been observed in human studies, adding significant confidence that the associations observed in human studies are real.

The review also found moderate certainty of evidence of an increased risk of rare tumors, such as pheochromocytomas in the adrenal glands and hepatoblastomas in the liver. Additionally, some studies indicated a possible association with lymphomas, although the findings were inconsistent.

ICBE-EMF highlights that in 2011, the World Health Organization's International Agency for Research on Cancer (IARC) classified radiofrequency radiation (RF-EMF) as a Group 2B "possible" human carcinogen, noting limited animal evidence. Since then, major animal studies — including those by the U.S. National Toxicology Program and the Ramazzini Institute — have found that RF radiation exposure causes cancer in rats.

The new WHO-funded review ` concluding there is "high certainty" animal evidence of cancer causation, reinforces calls for IARC to urgently reevaluate the cancer classification of RF radiation.

According to ICBE-EMF's experts, "the conclusion of the study commissioned by the WHO shows that the long-standing assumption that the "current government limits are based on — that cell phone RF radiation can only cause harm through tissue heating — is wrong

Therefore, we think this proposed rulemaking is inappropriate. The adoption of industry standards, best practices, or other self-regulatory efforts have not mitigated hazardous radiofrequency radiation exposure conditions and health risks that are being posed to everyone who reside and work in the United States. The repeal of federal regulations that currently govern the wireless communications infrastructure nation-wide is unwarranted at this time. While this repeal is being promoted to alleviate unnecessary burdens created by federal rules over the telecommunications industry, the regulatory burden would certainly shift to the states and municipalities who have been enacting various telecommunications policies. Finally, these changes would potentially increase adverse impacts, particularly on health and the environment.

In recognition of the flaws identified here with the current FCC radiofrequency human exposure guidelines and given the high level of certainty in the systemic review commissioned by the World Health Organization reporting high certainty of cancers in laboratory animals, the FCC should immediately move to revise its RF radiation exposure limits to protect public health and the environment.