AMERICAN TELECOMMUNICATIONS GUILD

Public Comment on RF/EMF Exposure and Human Health

Occupational Exposure, Real-World Wireless Infrastructure, Mid-Band Deployments, and Research Priorities

Agency	U.S. Department of Health and Human Services
Docket	HHS-OASH-2026-0397
Federal Register	91 FR 59792; published September 21, 2026
Respondent	American Telecommunications Guild (ATG)
Perspective	Workforce standards institution; worker with occupational exposure / industry workforce perspective
Submitted by	R. Brennen Duran, Founder & Executive Director

ATGuild.net | R.Brennen@ATGuild.Net | 623.523.9639

Executive Statement

The American Telecommunications Guild (ATG) submits this comment from the perspective of a nonprofit telecommunications workforce standards institution and the workers, employers, and infrastructure environments its program is designed to serve. ATG supports evidence-based wireless deployment and does not assert that ordinary exposure below current limits has been established to cause the nonspecific symptoms discussed in this comment. We do believe, however, that occupational RF exposure deserves substantially better measurement, disclosure, event reporting, and longitudinal study than it currently receives.

HHS specifically asks respondents to distinguish established evidence from emerging findings and uncertainty. ATG therefore separates three categories throughout this response: (1) established thermal hazards from sufficiently intense RF exposure; (2) peer-reviewed or government-documented occupational overexposure incidents and exposure-measurement findings; and (3) informal field reports that are hypothesis-generating only and should not be treated as proof of causation.

ATG recommends that federal health agencies prioritize real-world occupational exposure research in telecommunications, particularly maintenance and construction work performed near active transmitting systems, multi-operator sites, beamforming systems, radar or spectrum-sharing environments, and modern mid-band deployments. The workforce is a uniquely useful sentinel population because its members can encounter fields at distances and configurations unlike those experienced by the general public.

ATG's central recommendation: create a standardized national occupational RF exposure-and-event surveillance framework that links measured exposure conditions, work tasks, transmitter configuration, symptoms or clinical findings, and follow-up outcomes—without presuming causation in advance.

Q2 — Perspective Represented

ATG represents the worker-with-occupational-exposure and industry-workforce perspectives. ATG is an Arizona nonprofit workforce standards and credentialing institution for U.S. telecommunications infrastructure and is pursuing IRS recognition of 501(c)(3) status. Its institutional model includes a registered-apprenticeship architecture, worker-level credential verification, field safety and documentation standards, and a proposed data framework for real-world infrastructure work.

The comments below are grounded in federal regulatory materials, government spectrum documentation, peer-reviewed occupational literature, and field observations reported within the telecommunications workforce. Where ATG refers to field-reported symptoms, those observations are explicitly described as anecdotal and unverified.

Q3 — Reported Occupational Experiences and Potential Adverse Effects

Telecommunications workers can perform maintenance, construction, integration, troubleshooting, testing, and closeout work near active antennas and other RF sources. Unlike the general public, these workers may enter controlled areas, work at antenna elevation, move through complex near-field geometries, and encounter multiple operators or source types during a single shift.

Technicians informally report short-term symptoms after some high-intensity work around modern mid-band deployments. These reports are anecdotal, and ATG offers no causal claim: ATG does not presently have standardized exposure measurements, medical adjudication, a control group, or a dataset capable of establishing that RF exposure caused any symptom. ATG recommends that such reports be captured as testable signals within a structured surveillance system. Heat, dehydration, altitude, exertion, chemicals, sleep disruption, infectious illness, stress, and other workplace factors can produce overlapping symptoms.

The existence of confounding factors is precisely why ATG recommends structured surveillance rather than either dismissal or premature attribution. A 2022 systematic review of occupational RF-EMF measurements found that measured exposures have exceeded occupational limits near broadcasting and telecommunications transmitters, and that the literature includes case reports of accidental overexposure, mainly among maintenance workers near broadcast antennas and radar installations, followed by medical investigation of acute thermal effects; the review also concluded that emerging sources such as 5G warrant further occupational assessment. This evidence does not validate informal field reports, but it demonstrates that real occupational overexposure events occur and can produce acute symptoms that deserve measurement and medical follow-up.

Q5–Q6 — Exposure Standards and Risk Assessment

Federal health agencies should evaluate the FCC exposure framework in 47 CFR §§ 1.1307 and 1.1310; OSHA provisions and guidance relevant to nonionizing radiation and telecommunications; current IEEE/ANSI consensus standards; and contemporary international guidance such as the 2020 ICNIRP guidelines. These frameworks should be compared not only by numerical limits but by assumptions about averaging time, worker awareness, access control, near-field conditions, simultaneous sources, and the feasibility of actually controlling exposure during dynamic field work.

OSHA's nonionizing radiation provision, 29 CFR 1910.97, sets an advisory radiation protection guide rather than an enforceable exposure limit, and there is no comprehensive OSHA RF standard equivalent to many chemical exposure standards, while FCC rules contain the principal federal RF exposure limits for FCC-regulated transmitters. This creates an important practical issue for tower and wireless workers: compliance responsibility, site control, training, carrier coordination, employer practices, and worker behavior can be distributed across several entities.

ATG does not recommend that HHS presume current limits are unsafe. It recommends that HHS examine whether current risk-assessment methods sufficiently capture workface conditions that may be averaged out or poorly described by static compliance studies, including short-duration high-field tasks, partial-body exposure, multiple active sources, beamforming, dynamic power states, and repeated exposures across a workweek or career.

Priority Focus: C-Band, 3.45 GHz, and DoD-Related Mid-Band Environments

ATG recommends a targeted federal research program for mid-band occupational exposure. Commercial C-band in the United States occupies the 3.7–3.98 GHz range, while the 3.45 GHz Service occupies 3.45–3.55 GHz and was transitioned from federal use under a sharing and coordination framework involving Department of Defense incumbents. Separately, the Lower 3 GHz range (3.1–3.45 GHz) remains the subject of DoD/NTIA spectrum-sharing research and demonstrations.

These bands should not be conflated. Commercial C-band deployments are not synonymous with DoD systems, and a worker's presence at a commercial site does not establish exposure to military radar. The public record does show, however, that portions of the 3 GHz range involve coexistence among commercial systems and federal radar or other mission systems, and that federal policy is actively developing more dynamic sharing mechanisms. That makes these environments scientifically valuable for occupational research.

ATG recommends that studies involving these bands record more than nominal carrier frequency. Relevant parameters include transmitter type; radiated power; antenna gain; distance and worker geometry; beam direction and beamforming state; modulation; pulse characteristics; duty cycle; time averaging; simultaneous sources; radar activity where applicable; site configuration; duration; and whether the worker was in a controlled, restricted, or exclusion area. Without this context, "C-band exposure" or "DoD-band exposure" is too imprecise to support meaningful health analysis.

Q7–Q10 — Measurement, Disclosure, and Occupational Surveillance

ATG recommends a standardized occupational RF exposure record analogous in concept to task-based industrial-hygiene records. It should be simple enough for field adoption but detailed enough for epidemiology.

- Pre-job RF profile: active operators, antenna types, known frequencies/bands, expected power state, exclusion zones, and responsible network contact.
- Worker-level task record: job type, location relative to source, time at elevation or near antennas, PPE or RF monitor used, alarms, shutdowns, and changes in site state.
- Instrumented measurements where feasible: calibrated personal monitors and/or site surveys with frequency-aware logging rather than a single generic pass/fail field measurement.
- Exposure-event report: unexpected alarm, loss of transmitter coordination, entry into an exclusion zone, suspected overexposure, or symptoms temporally associated with a work event.
- Health follow-up: voluntary standardized symptom questionnaire, clinical evaluation when indicated, and follow-up at defined intervals for suspected overexposure incidents.
- De-identified national dataset: aggregate occupational records suitable for NIOSH/HHS research while protecting workers' employment and medical privacy.

Disclosure to workers should be operational, not merely legalistic. Workers should be able to identify what is transmitting, where the controlled boundaries are, who can reduce or disable power, what assumptions were used in the RF study, and

what changed since the last configuration. Site modifications that alter antenna type, power, beam configuration, or RF geometry should trigger an updated exposure assessment.

HHS should coordinate with NIOSH to develop an RF-specific Health Hazard Evaluation pathway for telecommunications workplaces and suspected exposure events. NIOSH's existing HHE program already evaluates workplace physical hazards, including radiation, and provides a natural institutional home for targeted field investigations.

Q11 — Workers With Elevated Occupational Exposure

Yes. Exposure assessment should differ for workers whose tasks intentionally place them near RF sources. The occupational category should not be treated as simply the general-public limit multiplied by a different factor. Worker risk assessment should incorporate task, source geometry, access control, body position, partial-body exposure, cumulative work history, concurrent heat and exertion, and realistic failure modes in coordination or shutdown procedures.

ATG particularly recommends cohort studies of tower technicians, rooftop technicians, RF engineers, broadcast technicians, radar maintenance personnel, and other workers who routinely enter controlled RF environments. These cohorts should be compared with occupational controls while measuring non-RF confounders rather than relying solely on self-reported exposure.

Q12–Q13 — Evidence Below Limits and Cumulative Exposure Patterns

ATG is not submitting evidence sufficient to conclude that nonspecific symptoms reported at exposure levels below current federal limits are caused by RF/EMF. WHO has long noted that individuals report dermatologic and fatigue-type symptoms they attribute to EMF, while controlled evidence has not established a causal relationship at low exposure levels. That uncertainty should be stated plainly.

At the same time, the absence of established causation for nonspecific symptoms does not eliminate the need for better occupational exposure science. Modern deployments introduce complex mixtures of frequencies, beamforming, changing duty cycles, multiple colocated operators, and repeated work across many sites. The appropriate federal response is improved dosimetry and surveillance capable of testing hypotheses rather than relying on either anecdote alone or assumptions based on nominal compliance.

Q15 — Wireless Infrastructure Evidence and Sensitive Locations

For infrastructure near homes, schools, childcare facilities, healthcare facilities, and workplaces, HHS should prioritize transparent exposure characterization and reproducible measurement. ATG does not recommend inferring health harm from proximity alone. Distance from a structure is an incomplete proxy because exposure depends on antenna orientation, height, power, gain, beam pattern, obstructions, duty cycle, and simultaneous sources.

For schools, childcare settings, healthcare facilities, and dense small-cell environments, ATG supports enhanced disclosure of modeled and measured exposure conditions and periodic reassessment after material network changes. This is a transparency and research recommendation, not a claim that compliant installations at these locations have been shown to cause harm.

Q16–Q18 — Federal Research Priorities and Additional Recommendations

ATG recommends the following federal priorities:

- A national occupational RF exposure and adverse-event reporting protocol designed jointly by HHS/NIOSH, FCC, OSHA, NTIA, and relevant industry and worker stakeholders.
- Prospective cohort studies of RF-exposed telecommunications and radar-related workers using measured exposure data rather than job title alone.
- Focused mid-band research covering 3.45 GHz, commercial C-band, and Lower 3 GHz federal/commercial sharing environments, with careful separation of commercial cellular and military/federal source characteristics.
- Research on acute, short-duration, partial-body, near-field, and multi-source exposure conditions encountered during installation and maintenance.
- Evaluation of personal RF monitors across contemporary beamforming and multi-band environments, including false-negative and alarm-performance characteristics.
- A standardized clinical protocol for suspected occupational RF overexposure, including exposure reconstruction and follow-up intervals.

- A public, de-identified repository of occupational exposure incidents and measurement studies that can support independent research.
- Periodic review of worker-facing disclosure and training requirements as network technologies and spectrum-sharing architectures evolve.

ATG further recommends that federal agencies invite structured submissions from field technicians and employers, but treat those reports as surveillance signals rather than proof of causation unless accompanied by adequate exposure characterization and clinical evidence. Informal field reports should be captured as testable hypotheses in such a system, and their scientific value will come from linking them to measured exposure, alternative workplace hazards, timing, dechallenge/recovery, recurrence, and medical evaluation.

Conclusion

The telecommunications workforce occupies a position between the laboratory and the general public: workers interact directly with the infrastructure under real operating conditions, often at distances and geometries that members of the public do not experience. That makes them both a population deserving protection and a potentially valuable source of exposure data.

ATG urges HHS to use this RFI to establish a more rigorous federal occupational research and surveillance program for RF/EMF exposure, with particular attention to modern mid-band systems, dynamic spectrum sharing, field maintenance, and multi-source environments. The objective should be neither to presume safety nor to presume harm, but to generate measurements and longitudinal evidence capable of resolving uncertainty.

ATG would welcome future federal engagement on worker-facing exposure documentation, field-data standards, training, and pilot surveillance methods for telecommunications infrastructure personnel.

Selected References and Government Sources

1. U.S. Department of Health and Human Services. Request for Information on Electromagnetic Fields (EMFs), Radiofrequency (RF) Radiation, and Wireless Radiation Exposure, 91 FR 59792 (Sept. 21, 2026). Source

2. Occupational Safety and Health Administration. Radiofrequency and Microwave Radiation — Standards and Exposure Evaluation. Source

3. Federal Communications Commission. Radiofrequency radiation exposure evaluation and limits, 47 CFR §§ 1.1307 and 1.1310. Source

4. Stam R. Occupational exposure to radiofrequency electromagnetic fields. Industrial Health. 2022;60(3):201-215. Source

5. World Health Organization. Electromagnetic hypersensitivity / Radiation and health. Source

6. International Commission on Non-Ionizing Radiation Protection. Guidelines for limiting exposure to electromagnetic fields (100 kHz to 300 GHz). Health Physics. 2020. Source

7. NTIA. FCC-NTIA Joint Coordination Procedure for the 3.45–3.55 GHz Band. Source

8. NTIA. Technical Feasibility of Sharing Federal Spectrum with Future Commercial Operations in the 3450–3550 MHz Band, NTIA TR-20-546. Source

9. NTIA. Advanced Dynamic Spectrum Sharing Demonstration in the National Spectrum Strategy (Lower 3 GHz, 3.1–3.45 GHz). Source

10. NIOSH. Health Hazard Evaluation Program. Source

Suggested Regulations.gov Comment-Box Summary

The American Telecommunications Guild (ATG), an Arizona nonprofit building workforce standards and credentialing for U.S. telecommunications infrastructure trades, submits the attached comment from the perspective of workers with occupational RF exposure. Tower and wireless technicians work closer to active transmitters, for longer periods and in more complex conditions than the general public, yet occupational exposure is rarely measured at the worker level or linked to health outcomes. ATG supports evidence-based wireless deployment and does not presume current limits are unsafe. We recommend a national occupational RF exposure-and-event surveillance framework, developed jointly by HHS/NIOSH, FCC, OSHA, and NTIA, that links measured exposure, transmitter configuration, and work task to reported symptoms and follow-up outcomes; standardized worker-facing exposure disclosure; validation of personal RF monitors in beamforming and multi-band environments; and prospective cohort studies of tower and rooftop technicians using measured rather than assumed exposure. The attached response addresses Questions 2, 3, 5–13, and 15–18.