# *How the Lack of Radio Frequency Radiation Safety Impacts the Wireless Industry.*

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# The Problem of RF Radiation exposure at wireless transmission sites

## *"Substantial RF Safety concerns exists for third parties."*

- On a daily basis, thousands of third-party workers are compelled to work in close proximity to "RF radiation" transmitting antennas without their knowledge or understanding of the health risks.
- RF emissions can extend from the face of an antenna to several meters. There is no "rule-of-thumb" regarding the exposure distances, each antenna system is unique.
- RF radiation is tasteless, odorless, and invisible, and in all but a few instances, third-party workers will not be aware of their RF over-exposure injuries.
- Stakeholders in the RF radiation exposure issue includes: property owners, workers, employers, FCC licensees (governmental and commercial), utility companies, federal, state and local governments, school districts, universities, and the insurance industry.
- Currently, no comprehensive method of RF radiation safety has been implemented to prevent RF radiation exposure injuries to third-party workers.



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# Who should be responsible for providing RF radiation safety?

***"Those that transmit, those that host, and those that may be physically harmed from RF radiation"***

- **FCC Licensees (Governmental and Commercial):** FCC licensees create a hazard that the law requires them to mitigate. Veiled in a poorly conceived health & safety practice, they place the responsibility for RF safety on to property owners, contractors, workers and others.

- **Property Owners:** Property owners are responsible to ensure that no one is harmed while on their property. When they permit employees or third-party workers access to their properties that host wireless facilities, they have created a significant liability.

- **Employers and their employees:** All employers are required to provide a safe work place free of any recognized hazards for their employees. However, unless the employer is a FCC licensee, they have little or no knowledge of hazards associated with RF radiation exposures and are at a loss when it comes to being able to protect their employees. Employees have been, and will be, exposed to RF radiation.

- **State and Local Governments:** Their multi-layered liability emanates from their various roles as an FCC licensee, a property owner and as an employer.



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# What are the primary RF safety regulatory standards?

Federal Communications Commission

- As a condition for obtaining and maintaining a license to transmit, FCC licensees must certify that they will not expose persons above the FCC RF human exposure limits. 47 CFR 1.1310 and 1.1307(b).
- In 1996, IEEE established that RF radiation exposure causes "behavior disruption" including: reduced brain function, memory loss, depression, mood disorders, sleep disorders and impaired or diminished cognitive function.

OSHA

- OSHA's General Duty Clause provides that employers (including property owners) must provide a workplace free of recognized hazards which may cause serious harm. 29 USC 654, Section 5(a)(1).



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# What practices are currently being utilized to protect workers from RF radiation exposure?

***"Today's ineffective and outdated methods utilized to protect workers from being harmed from RF radiation exposure, provide no RF safety protection."***

**Locks** sound like a good idea; just restrict access and no one will be over-exposed to RF radiation. Wrong. Restricting access may only protect vandals from RF over-exposure. Workers are always provided access to perform their duties, often near RF antennas.

**Signs** seem like a good idea also. However they are often missing, posted in the wrong place, misleading, or too ambiguous for workers to understand. Signs are also plainly ignored. Workers go to a job site to perform a task, that's what is on their minds, not signs.

**Pocket Protection Monitors** are not designed to provide comprehensive RF safety and are only occasionally used by RF technicians. These devices do not provide RF safety for the protection of all workers.



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# Examples of different types of wireless antennas

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# Stealth Antenna Sites

Third-party workers are often unknowingly over-exposed to RF radiation, especially at stealth wireless transmission sites.

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# Rooftop & Building Mounted Antennas

Although locks are often used to prevent access to roof tops and signs are used to notify workers of RF emissions, both fail at ensuring workers are protected from RF radiation over-exposures.

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# Pole Mounted Antennas

Wireless antennas are everywhere; from utility poles to stadium, parking lot, and municipal light structures. Third-party workers are not provided the same level of care as the FCC licensee's employees who receive RF safety training and the benefit of antenna power downs.

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# Hidden RF hazards present safety concerns for workers

Cell sites present significant safety concerns for workers who are compelled to work near RF transmitting antennas. The FCC licensee is in violation of their FCC license agreement if a worker enters the red RF hazard area without having knowledge of the RF hazard. 47 CFR 1.1307(b).

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# *FCC's Notice of Proposed Rule Making – 3/29/13*
# *Proposed Changes Regarding Human Exposure to RF*

- ***Paragraph 84:*** Therefore, it is in the interest of these licensees to share information about power and other operating characteristics in order to achieve accurate representations of the RF environment. The Commissions continues to encourage all site occupants, owners, leasers, and managers to cooperate in these endeavors, and we note that site user agreements are particularly useful and desirable to achieve this end.

- ***Paragraph 109:*** In proposing, in this *Further Notice*, changes to our RF safety rules, our intent is to appropriately protect the public without imposing undue burden on industry. ...We also request comment on the most cost-effective approach for modifying existing policies and practices to achieve the goals of our proposed rules while still ensuring appropriate protection of the public.

- ***Paragraph 185:*** The Commission realizes that rigid requirements may not be practical in all cases, but clear rules that can be followed where feasible can help avoid inadvertent over-exposure and unnecessary public concern.

- ***Paragraph 186:*** We realize that each transmission site is different and that a wide range of exposure environments may exist, and so we seek comment on how to simultaneously provide flexibility and certainty to licensees and site owners while at the same time ensuring enforceable compliance with our exposure limits.

- ***Paragraph 193:*** However, since it is ultimately the licensee that is responsible for compliance, we seek comment on how to better encourage cooperation between property owners, managers and licensees in the implementation of RF safety programs.



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# *How RF CHECK's patented solution protects the wireless ecosystem*

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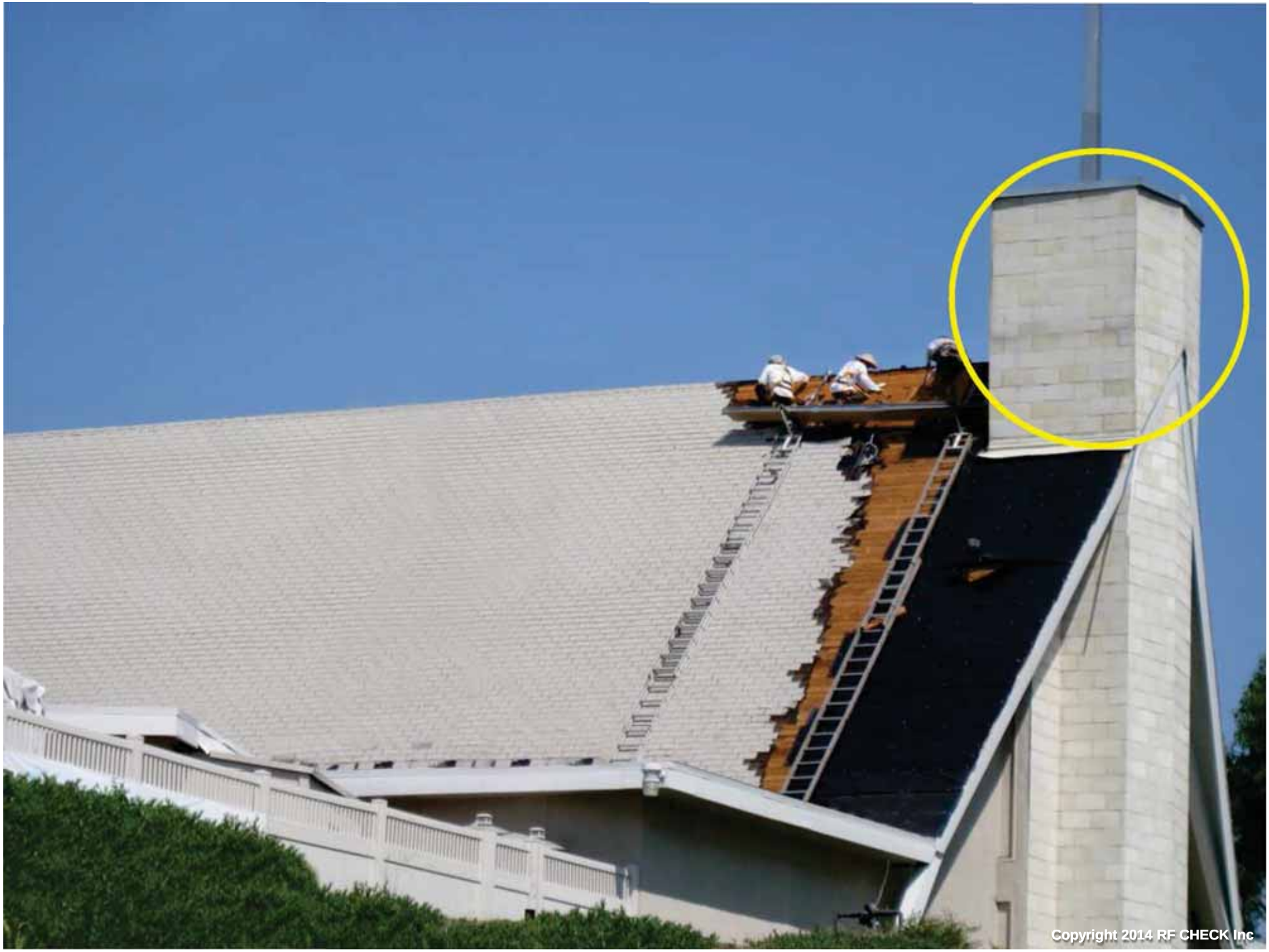
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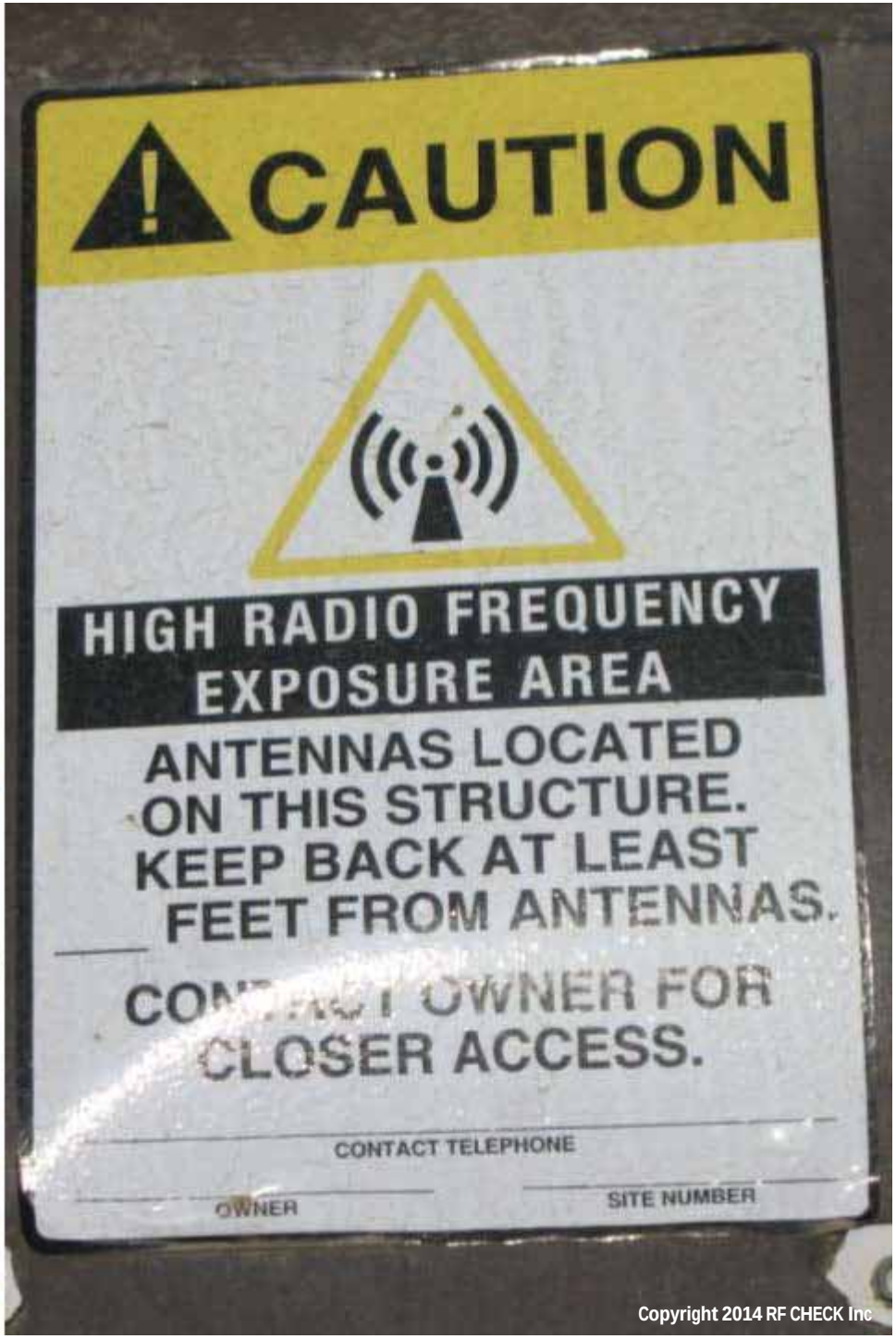


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# RF CHECK Data Distribution

Online Database System

RF Worker Training and Certification

RF Radiation Safety Center

Accessible through any mobile device

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*“RF CHECK’S multi-layered RF safety and compliance solution provides an unparalleled RF loss control mechanism”*

## What is involved in RF CHECK’s patented solution?

- Implementation of a comprehensive national RF safety protocol
- Sophisticated work flow process to mitigate RF radiation exposure to workers and monitor enterprise participants for compliance
- RF training and certification for workers, employers and site owners
- Real time site specific safety plans available to workers 24/7
- Unique user interfaces for each wireless ecosystem participant
- Multi-layered audit functions and quality control procedures
- Permanent records of all training, certification, site access, and other matters that further insulate the stakeholders from liability

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Before RF CHECK…the worker on the left is being over-exposed to RF radiation.
After RF CHECK…the worker on the right performs his task free from RF radiation.

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# How the Service Providers Benefit From the RF CHECK Solution

Provides an immediate FCC de facto safe harbor which can promote a regulatory safe harbor within a reasonable period of time.

Provides a no-cost, no-fault solution for FCC RF human exposure compliance.

Provides a *verifiable process* for site owners and their contractors to participate in protecting workers from RF radiation injuries.

Provides a *verifiable process* for SP's network contractors to assume the responsibility of protecting their workers from RF radiation injuries.

Removes the substantial threat of network disruption arising from site leases. Industry wide leases *"fail to warn"* site owners of the financial exposure they unknowingly assume from potential RF radiation litigation.

Opportunity to reallocate resources from RF site compliance to revenue generating activities. Also frees up regulatory staff to focus on other issues.

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# FCC Benefits

- *RF CHECK* establishes a new paradigm of RF safety which assures FCC regulatory compliance at all wireless transmission sites across the nation.
- *RF CHECK 's* RF safety protocol utilizes a living data repository of every wireless antenna system in the nation.
- *RF CHECK* provides the FCC a no-cost access to a comprehensive database containing site specific RF safety information.
- *RF CHECK 's database* allows the FCC the ability to audit all wireless sites for compliance purposes.
- *RF CHECK* protects the financial interests of all wireless ecosystem stakeholders and by extension protects the continuous growth of the nation's wireless networks.
- *RF CHECK* assures compliance with current and proposed (NPRM) FCC RF human exposure regulations at all wireless sites across our nation.

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***RF CHECK has developed a patent portfolio of the world's first and only comprehensive RF safety and compliance solution,***
**" RF Work Aware™"**

***This innovative solution establishes a new RF safety protocol that utilizes a living data repository of every wireless antenna system in the nation to provide unparalleled RF safety to all workers while simultaneously protecting the financial interests of the other stakeholders within the wireless ecosystem.***

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For more information:

Drew Fountain
Founder & Vice Chairman
drew@rfcheck.com
760.822.7969

RF CHECK Incorporated
12707 High Bluff Drive
San Diego, CA 92130

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