

PC 2-8-18
#3

This letter is to put the Planning Commission on notice that Site 2 assessors Parcel Number 077-091-06 and the adjacent land to the North and East with the Frog Pond and Sunset View, have been historically and currently are a Native American Indian Religious Site, Honoring Gentle Bear and the Grand Fathers.

This demands a review process E-106 Form 620, Contact with the State Historical Preservation Office SHPO and FCC before you can OK this site for a tower - Thank you

Bundy Helleney

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PLANNING DEPARTMENT

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077-432 021 00

077 091 111 00

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077-021-99-100

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lot 114 Puerta Del Sol



[Home](#) / [Wireless](#) /

Tower and Antenna Siting

Building a new tower or collocating an antenna on an existing structure requires compliance with the Commission's rules for [environmental review](#) (<https://www.gpo.gov/fdsys/pkg/CFR-2000-title47-vol1/pdf/CFR-2000-title47-vol1-sec1-1307.pdf>). These rules ensure that licensees and registrants take appropriate measures to protect environmental and historic resources, and that the agency meets its obligations under the National Environmental Policy Act (NEPA) to consider the potential environmental impact of its actions, as well as under other environmental statutes such as the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA). A new tower construction requires:

- Approval from the state or local governing authority for the proposed site;
- Compliance with FCC rules implementing the [NEPA](#), which includes separate procedures for
 - [ESA](#); and,
 - [NHPA](#) (including [Section 106](#)).
- Depending on the tower's height and location, construction may also require:
 - [Federal Aviation Administration \(FAA\) notification](#); and,
 - [Antenna Structure Registration \(ASR\)](#) with the FCC.

In 2016, the Wireless Telecommunications Bureau held a [workshop](#) ([/news-events/events/2016/05/environmental-compliance-and-historic-preservation-workshop](https://www.fcc.gov/news-events/events/2016/05/environmental-compliance-and-historic-preservation-workshop)) which provides a general overview of the process.

Collocations, including Distributed Antenna Systems (DAS) and Small Cells, may also require compliance with these same processes. See the [Collocation Agreement](#) (<http://wireless.fcc.gov/releases/da010691a.pdf>) and [Factsheet](#) (http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-02-28A1.pdf) for more information about collocations that require compliance with NEPA, NHPA, FAA and ASR rules. The Commission's October 2014 [Infrastructure Report and Order](#) (https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-153A1.pdf) includes some NEPA and NHPA exclusions specific to DAS and Small Cell deployments.

State and Local Authorities

[Section 332\(c\)\(7\) of the Communications Act](#) (<https://www.law.cornell.edu/uscode/text/47/332>) preserves state and local authority over zoning and land use decisions for personal wireless service facilities, but sets forth specific limitations on that authority. Specifically, a state or local government may not unreasonably discriminate among providers of functionally equivalent services, may not regulate in a manner that prohibits or has the effect of prohibiting the provision of personal wireless services, must act on applications within a reasonable period of time, and must make any denial of an application in writing supported by substantial evidence in a written record. The statute also preempts local decisions premised directly or indirectly on the environmental effects of radio frequency (RF) emissions, assuming that the provider is in compliance with the Commission's RF rules.

Allegations that a state or local government has acted inconsistently with Section 332(c)(7) are to be resolved exclusively by the courts (with the exception of cases involving regulation based on the health effects of RF emissions, which can be resolved by the courts or the Commission). Thus, other than in RF emissions cases, the Commission's role in Section 332(c)(7) issues is primarily one of information and facilitation.

[Section 1455\(a\) of the Communications Act](#) (<https://www.law.cornell.edu/uscode/text/47/1455>), enacted as part of the Middle Class Tax Relief and Job Creation Act of 2012, establishes a further limitation on state and local land use authority over certain wireless facilities. Specifically, it provides that a state or local government may not deny and shall approve any eligible facility request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station, and defines eligible facility requests as including requests for the collocation, removal, or replacement of transmission equipment.

The Commission has adopted a rule, codified at [47 C.F.R. § 1.40001](#) (https://apps.fcc.gov/edocs_public/attachmatch/DA-15-598A1.pdf), to further clarify and implement these requirements.

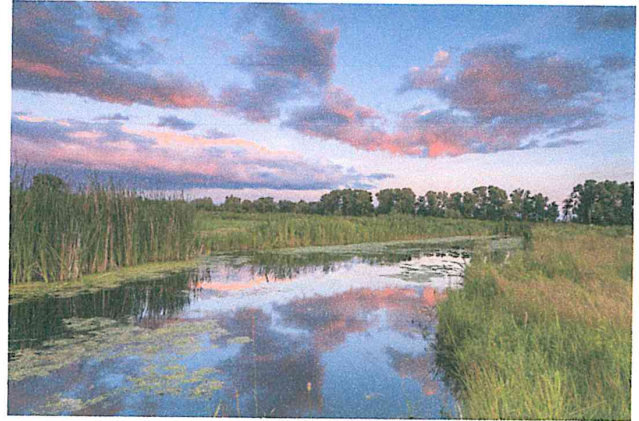
FCC Items Related to Section 332(c)(7) and Section 1455(a) include:

- Report and Order, FCC 00-408, adopted November 13, 2000 (establishing procedures for requesting relief under Section 332(c)(7) from impermissible State and local regulation of wireless facilities based on the environmental effects of RF emissions.
- Declaratory Ruling, FCC 09-99, adopted November 18, 2009 (clarifying certain aspects of the limits on state and local authority under Section 332(c)(7)).
- Report and Order, FCC 14-153, adopted October 21, 2014 (adopting rule to clarify and implement requirements of Section 1455(a), and providing further clarification of Section 332(c)(7)).

The National Environmental Policy Act

www.fcc.gov/general/tower-and-antenna-siting

NEPA requires agencies to consider and disclose the environmental effects of its actions to improve decision-making and encourage transparency, public participation, and accountability. Effects are defined broadly to include ecological, aesthetic, historic, social, and cumulative and indirect effects.



NEPA has three levels of review, depending on the significance of the effect (which, in turn, depends on the context and intensity of the action; for example, a tall, guyed tower in an ecologically sensitive area is likely to have more significant effects than a short, unguyed tower in an industrial area):

Categorical exclusions (CatExs)—for actions or types of actions which individually and cumulatively are deemed to have minimal or no impacts on the environment. The actions may therefore qualify as excluded from detailed environmental analysis.

Environmental Assessments (EAs)—for actions that may have a significant effect, an EA determines potentially significant impacts. If no significant impacts are found, the agency issues a Finding of No Significant Effect (FONSI).

Environmental Impact Statements (EISs)—for major federal actions with the potential to significantly affect the quality of the human environment. These actions require a detailed analysis of actions and alternatives and concludes with a Record of Decision (ROD).

NEPA does not mandate an outcome or prevent projects from moving forward; it only requires consideration of effects and of alternatives to mitigate the environmental effects of a project. To implement NEPA, each federal agency adopts its own procedures, and the Council on Environmental Quality oversees NEPA implementation.

FCC's NEPA Process

The FCC considers registering and licensing towers and facilities to be actions that trigger agency NEPA obligations. Consequently, [FCC rules \(https://www.law.cornell.edu/cfr/text/47/part-1/subpart-1\)](https://www.law.cornell.edu/cfr/text/47/part-1/subpart-1) impose enforceable duties on licensees and applicants in order to meet the agency's NEPA obligations.

All facilities constructed by or for FCC licensees must comply with agency environmental regulations implementing NEPA. The rules apply to all licensees and registrants: commercial licensees, utilities, public safety, railroads, and mining companies. Because licensees and registrants cannot locate on a facility that has not gone through a NEPA review, tower constructors that are neither licensees nor registrants must also follow these rules. These regulations ensure agency compliance with the National Historic Preservation Act (NHPA) and the Endangered Species Act (ESA) as well.

While the agency has delegated the initial assessment of CatExs (and certification to that effect if required) and preparation of EAs to licensees and applicants, compliance with NEPA rests with the FCC.

FCC environmental rules categorically exclude all actions from detailed environmental review except those associated with the construction of facilities that fall into certain categories. The categories of facilities requiring environmental assessments (EAs) include those facilities:



- Located in a wilderness area (most likely on federal land) or in a wildlife preserve (likely on federal land);
- That might affect threatened and endangered species or their habitat (ESA);
- That might affect properties included in or eligible for inclusion in the National Register of Historic Places (NRHP) or Indian religious and cultural sites;

- That will be in a floodplain;
- Whose construction will involve "significant changes in surface features" (e.g., in wetlands, water diversions, significant ground disturbance, deforestation);
- That might affect migratory birds if the towers are over 450 feet; or
- That involve high intensity lighting in a residential area or would cause RF radiation in excess of FCC-established limits.

If any element of a proposed project – including the tower, fence, trenching, roads, parking, power and fiber connections and their operation and maintenance – falls into any of these categories, the applicant must [file an EA \(/help/filing-environmental-assessment-antenna-structure-registration-asr-system\)](#) which discloses those effects and on which the public can comment.

Complying with FCC environmental regulations requires completing an analysis of the categories BEFORE certifying that there is no significant environmental effect. Analysis includes, for example, compliance with ESA and NHPA requirements.

After an EA is filed, the document is put on public notice for one month, during which time the FCC ensures its sufficiency. If no objections or issues are identified, the FCC issues a FONSI.

Despite the presumption of actions being categorical exclusion, the agency may order additional environmental review on issues beyond the above checklist, or upon consideration of public comments. The agency may also ask for mitigation to reduce project impacts.

Grading soil, removing vegetation, clearing an area or otherwise beginning construction or building without following these requirements or before completion of the FCC's environmental process can constitute a violation of FCC rules and subject the party to potential enforcement action. Granting of a license is NOT an authorization to build unless all environmental review requirements have been met.

Below is more information about the FCC NEPA process and compliance with related environmental statutes.

- [NEPA Checklist \(http://wireless.fcc.gov/nepa/EA_checklist.pdf\)](http://wireless.fcc.gov/nepa/EA_checklist.pdf)
- NEPA FAQs
- [NEPANet - A One Stop Shop for NEPA-Related Information \(https://ceq.doe.gov/nepa/nepanet.htm\)](https://ceq.doe.gov/nepa/nepanet.htm)
- [NEPA Fact Sheet \(/sites/default/files/NEPA_Factsheet_111816.pdf\)](/sites/default/files/NEPA_Factsheet_111816.pdf)
- [Form 601 Flow Chart \(/sites/default/files/Form_601_FlowChart.pdf\)](/sites/default/files/Form_601_FlowChart.pdf)
- [Form 854 Flow Chart \(/sites/default/files/Form_854_FlowChart.pdf\)](/sites/default/files/Form_854_FlowChart.pdf)
- [NEPA Process Overview \(/sites/default/files/NEPA_Process_Overview.pdf\)](/sites/default/files/NEPA_Process_Overview.pdf)



Endangered Species Act

Section 1.1307(a)(3) of the Commission's rules, 47 C.F.R. §1.1307(a)(3), requires applicants, licensees, and tower owners (applicants) to consider the impact of proposed facilities on sensitive species and their habitat. Under the Endangered Species Act (ESA), 16 U.S.C. s. 1531 *et seq.*.....it is prohibited to "take" (i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.) Applicants must therefore determine before constructing and before submitting an EA if required whether any proposed facility may affect listed, threatened or endangered species or designated critical habitats, or are likely to jeopardize the continued existence of any proposed threatened or endangered species or designated critical habitats.

The [U.S. Fish and Wildlife Service \(FWS\) \(https://www.fws.gov/endangered/\)](https://www.fws.gov/endangered/), which administers the ESA, provides an [online mapping tool \(https://ecos.fws.gov/ipac/\)](https://ecos.fws.gov/ipac/) to determine which species may need to be considered for proposed facilities. If a qualified biologist determines that proposed facilities may have an effect, a licensee or registrant must notify the FCC and file an environmental assessment. Applicants must submit a request for FWS concurrence with the Applicant's effects determination. If the FWS determines that the proposed facility will affect protected species or habitats, Applicants must enter formal consultation with the FWS. The FCC provides a [letter \(http://wireless.fcc.gov/endangered-species-act/endangered-species-letter.pdf\)](http://wireless.fcc.gov/endangered-species-act/endangered-species-letter.pdf) designating applicants as non-federal representatives of the FCC for purposes of consultation with the FWS. In significant portions of the US, applicants must follow the FWS Framework to consider effects to the [Northern Long-Eared Bat \(https://apps.fcc.gov/edocs_public/attachmatch/DA-16-476A1.pdf\)](https://apps.fcc.gov/edocs_public/attachmatch/DA-16-476A1.pdf). In some regions, FWS offers Blanket Clearance to proposed facilities meeting certain criteria to streamline these processes.



- [FWS Delegation Letter \(http://wireless.fcc.gov/endangered-species-act/endangered-species-letter.pdf\)](http://wireless.fcc.gov/endangered-species-act/endangered-species-letter.pdf)
- [Online Endangered Species Act Review using IPaC \(http://wireless.fcc.gov/endangered-species-act/IPaC_info_sheet_tower_applicants.pdf\)](http://wireless.fcc.gov/endangered-species-act/IPaC_info_sheet_tower_applicants.pdf)
- [Fact Sheet: \(/file/3819/download\)Minimizing Habitat Fragmentation \(http://wireless.fcc.gov/endangered-species-act/Habitat_Fragmentation_FACT_SHEET.pdf\)](http://wireless.fcc.gov/endangered-species-act/Habitat_Fragmentation_FACT_SHEET.pdf)
- [Fact Sheet: \(/file/3820/download\)Minimizing Effects on Prairie Grouse and Sage Grouse \(http://wireless.fcc.gov/endangered-species-act/Prairie_Grouse_FACT_SHEET.pdf\)](http://wireless.fcc.gov/endangered-species-act/Prairie_Grouse_FACT_SHEET.pdf)
- [Guidance on Northern Long-Eared Bat \(https://apps.fcc.gov/edocs_public/attachmatch/DA-16-476A1.pdf\)](https://apps.fcc.gov/edocs_public/attachmatch/DA-16-476A1.pdf)

Migratory Birds

Under the Note to paragraph (d) of Section 1.1307, the Commission requires an Applicant to prepare an EA that considers the effects on migratory birds when a proposed antenna structure will be over 450 feet above ground level (AGL). Each year, millions of birds collide with communications towers and die. Tall, lit, and guy-wired towers are implicated in significantly more bird fatalities than short, unlit, self-supported towers. However, towers of almost any height have the potential to harm migratory birds, and tower owners can [reduce or minimize these effects \(/file/3818/download\)](#) in a number of ways, often with [little or no cost to the tower owner \(/guides/towers-and-birds\)](#). For example, because birds are attracted to non-flashing lights but less so to flashing lights, using flashing lights can prevent collisions.

The U.S. Fish and Wildlife Service (FWS) has formulated [voluntary guidelines \(https://us-fcc.box.com/s/sc1742pny7w14vzzhcz3hrkof1qn3l\)](https://us-fcc.box.com/s/sc1742pny7w14vzzhcz3hrkof1qn3l) for tower siting to address potential effects on migratory birds. These guidelines include suggestions on tower siting, height, and lighting to avoid adverse effects to migratory birds. The Avian Power Line Interaction Committee (APLIC), a collaboration of the utility industry, wildlife resource agencies, conservation groups, and manufacturers of avian protection products, also developed [guidance \(http://www.aplic.org/uploads/files/11218/Reducing_Avian_Collisions_2012watermarkLR.pdf\)](http://www.aplic.org/uploads/files/11218/Reducing_Avian_Collisions_2012watermarkLR.pdf) for methods to reduce bird/power line electrocutions and collisions which reduces bird mortalities and associated power outages. Tower owners should consider incorporating these guidelines into their tower projects and maintenance operations.

As of September 28, 2016, the Federal Aviation Administration (FAA) no longer permits red non-flashing lights on any new tower above 150 feet AGL. The FAA has asked owners of existing towers to submit plans for eliminating the use of non-flashing lights on existing towers; and the FCC and FAA have developed a [process \(/sites/default/files/Light_Changes_Information_Update_Jan_2017.pdf\)](#) by which registrants may do so.



- [Fact Sheet: Addressing Raptor Nesting on Towers \(/file/3821/download\)](#)
- [FAA Advisory Circular on Obstruction Marking and Lighting \(https://us-fcc.box.com/s/ofvfbg3q8wywypdcs0kf00t68yj8mq2p\)](https://us-fcc.box.com/s/ofvfbg3q8wywypdcs0kf00t68yj8mq2p)

In order to better protect endangered species and migratory birds, the Wireless Telecommunications Bureau released a [Final Programmatic Environmental Assessment \(PEA\) \(/general/programmatic-environmental-assessment-pea\)](#) that evaluates the potential environmental effects of the FCC's Antenna Structure Registration (ASR) program.

The National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 is implemented through the FCC's environmental rules. Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties. The FCC considers the construction of any communications tower of any height or the collocation of communications equipment using FCC-licensed spectrum a federal undertaking. While Antenna Structure Registration (ASR) is required for some communications towers, the need to register a structure is not determinative of whether the Section 106 process is required.

Commission licensees and applicants are delegated the responsibility for initiating the Section 106 review process for proposed facilities, identifying and evaluating historic properties, and assessing effects. This process includes consultation with the appropriate State Historic Preservation Officer (SHPO) and Tribal Nations that have expressed an interest in the proposed project. For the Tribal Nations, either a Tribal Historic Preservation Office (THPO) or a cultural preservation office have been established at each Tribal Nation and designated the point-of-contact for the Section 106 process. Historic properties are sites, structures, buildings, and objects that are listed on or eligible for listing on the National Register of Historic Places. SHPO's maintain the lists of these historic properties. For Tribal Nations, historic properties include sites and places of cultural and religious significance. Due to the sensitive nature of these historic properties, these places are often not publicly identified. Accordingly, project proponents should engage with the Tribal Nations for this information. Tribal Nations have the option to provide this information to the FCC through its Federal Preservation Officer who will ensure that the information is protected throughout the Section 106 process.

NHPA Information (<http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=36&PART=800&SUBPART=B&TYPE=TEXT>)

- [Title 36 of the Code of Federal Regulations, Part 800, Subpart B. \(http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=36&PART=800&SUBPART=B&TYPE=TEXT\)](http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?TITLE=36&PART=800&SUBPART=B&TYPE=TEXT)
- [Advisory Council on Historic Preservation \(ACHP\) Home Page \(http://www.achp.gov/\)](http://www.achp.gov/)
- [MO&O clarifying licensees' responsibilities in complying with the NHPA. \(/Bureaus/Wireless/Orders/1998/da981580.txt\)](#)
- [Local Section 106 Notice Requirement Template \(/sites/default/files/Local%20Section%20106%20Notice%20Template.docx\)](#)

The Nationwide Programmatic Agreements

The Commission has entered into two Nationwide Programmatic Agreements (NPAs) with the Advisory Council on Historic Preservation (ACHP) and the National Conference of State Historic Preservation Officers (NCSHPO). ACHP oversees NHPA implementation, and NCSHPO represents the State Historic Preservation Officers. These NPAs describe the Commission's Section 106 processes for [new tower construction \(https://www.law.cornell.edu/cfr/text/47/appendix-C_to_part_1\)](https://www.law.cornell.edu/cfr/text/47/appendix-C_to_part_1) and [collocation of communications equipment on existing structures \(https://www.law.cornell.edu/cfr/text/47/appendix-B_to_part_1\)](https://www.law.cornell.edu/cfr/text/47/appendix-B_to_part_1). In 2016, the ACHP approved the [First Amendment to the Collocation Agreement \(/document/wtb-announces-execution-amendment-collocation-agreement\)](#).

The NPA requires that project proponents use the FCC Form 620 (new towers) and FCC Form 621 (collocations), which are available on the [FCC Forms Page \(/formpage.html\)](#). The Form 620 and Form 621 must be completed by qualified individuals as stated on the forms. These forms are submitted directly to the SHPO and are not sent to the FCC unless requested by the FCC. Project proponents are encouraged to complete the Form 620 and Form 621 using the E106 system as the forms are easier to complete and the system contains internal checkpoints to ensure that they are complete and accurate. Using the E106 system facilitates FCC access to answer questions or address issues during the Section 106 process. Prior to submitting, the applicant must confirm whether the specific SHPO utilizes E-106 for Section 106 reviews and determine their preferred submittal procedures. Many SHPOs are required by state law to maintain hard copies.

If a SHPO has not responded within 30 days, determinations of "No Adverse Effect" can be submitted to the Commission by following procedures outlined in [Public Notice DA 05-599 \(http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-599A1.pdf\)](#). Such referrals may be made through the E-106 system when the Form 620 or 621 has been submitted electronically.

If a proposed project will have an adverse effect on historic properties, the project proponent must notify the ACHP using the ACHP's E106 system. The project proponent must engage the SHPO and all consulting parties, including Tribal Nations, about the adverse effect and the potential to mitigate that effect. To proceed beyond the initial determination of adverse effect, the project proponent must provide the SHPO and all consulting parties with an alternatives analysis or plan that demonstrates that the proposed location is the only feasible location due to engineering requirements. The FCC may review these plans.

In addition, the project proponent and the consulting parties should develop appropriate mitigation measures. Mitigation measures should have a public benefit directly tied to the adverse effect. Payments of cash are not appropriate. The project proponent should prepare a [Memorandum of Agreement \(MOA\) \(https://us-fcc.box.com/s/z3rvstc180q7ngfm2j8hico9lnfi6bnn\)](#) to be signed by the FCC, SHPO, project proponent and all consulting parties. For review prior to any party's signature, the draft MOA must be sent as a word document to the FCC at s106.moa@fcc.gov (<mailto:s106.moa@fcc.gov>). After the MOA is FCC-approved and signed by all parties, the project proponent must prepare and file an environmental assessment (EA) in accordance with the FCC rules.

Section 106 Tools

[TCNS/E-106 \(http://wireless.fcc.gov/outreach/index.htm?job=tower_notification\)](http://wireless.fcc.gov/outreach/index.htm?job=tower_notification)

[Form 620 \(new towers\) \(/Forms/Form620/620.pdf\)](#)

[Form 621 \(collocations\) \(/Forms/Form621/621.pdf\)](#)

[ACHP Delegation Letter for Section 106 Review \(http://wireless.fcc.gov/section106/nepa106.pdf\)](http://wireless.fcc.gov/section106/nepa106.pdf)

[Webcast \(http://wireless.fcc.gov/presentations/section106-deployment-demo.html\)](http://wireless.fcc.gov/presentations/section106-deployment-demo.html)

[Factsheet \(http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-02-28A1.pdf\)](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-02-28A1.pdf)

[Tribal Declaratory Ruling \(http://wireless.fcc.gov/section106/tribal-declaratory-ruling.pdf\)](http://wireless.fcc.gov/section106/tribal-declaratory-ruling.pdf)

Tribal Notification

The NHPA requires that [federal agencies must consult with any federally-recognized Tribal Nation \(http://www.achp.gov/regs-fees.html#role\)](#) that attaches religious and cultural significant to historic properties affected by an undertaking in carrying out the *Section 106 review* process.

Since 2004, the Commission has maintained the [Tower Construction Notification System \(http://wireless.fcc.gov/outreach/index.htm?job=tower_notification\)](http://wireless.fcc.gov/outreach/index.htm?job=tower_notification) (TCNS), an on-line, password-protected system that notifies all Tribal Nations, Native Hawaiian Organizations (NHOs), and State Historic Preservation Officers (SHPOs) of proposed communication tower construction in their areas of interest. Recipients can respond directly to the companies if they have concerns about a proposed construction.

In order to use the FCC's online filing systems, you need an FCC Registration Number (FRN).

The Commission follows [guidance published by the Advisory Council on Historic Preservation \(ACHP\) \(http://www.achp.gov/nap.html\)](http://www.achp.gov/nap.html) with respect to the role of Tribal Nations in the Section 106 Review Process.

Indian Tribal Contacts

[Tribal Nations Leaders Directory \(Bureau of Indian Affairs\) \(http://www.bia.gov/WhoWeAre/BIA/OIS/TribalGovernmentServices/TribalDirectory/\)](http://www.bia.gov/WhoWeAre/BIA/OIS/TribalGovernmentServices/TribalDirectory/)

[Tribal Historic Preservation Officers and Tribal Cultural Resource Officers \(http://www.achp.gov/thpo.html\)](http://www.achp.gov/thpo.html)

Section 106 Reviews for Wireless Communications Facilities Construction and Modification Involving Multiple Federal Agencies

In 2009, the ACHP issued a [Program Comment \(http://www.achp.gov/docs/ProgramCommentRUS_NTIA_FEMA.pdf\)](http://www.achp.gov/docs/ProgramCommentRUS_NTIA_FEMA.pdf) to facilitate the deployment of broadband by eliminating duplicative Section 106 reviews for projects regulated by the Commission but funded or otherwise subject to involvement by another federal agency.

The [Program Comment was extended and expanded in 2015 \(https://www.federalregister.gov/articles/2015/09/30/2015-24713/notice-of-amendment-to-program-comment-to-avoid-duplicative-reviews-for-wireless-communications\)](https://www.federalregister.gov/articles/2015/09/30/2015-24713/notice-of-amendment-to-program-comment-to-avoid-duplicative-reviews-for-wireless-communications), and relieves the US Department of Agriculture Rural Utility Service (RUS), National Telecommunications and Information Administration (NTIA), Federal Emergency Management Agency (FEMA), First Responder Network Authority (FirstNet),

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THE MAIDU AND MIWOK TRADERS OF SQUAW HOLLOW

Before Pleasant Valley Road was paved, most of our roads were dirt, used by horse and buggy, stage coaches, freight wagons, lumber wagons drawn by oxen or steam wagons, people riding horseback or bicycles or on foot. Seemingly endless cattle and sheep droves followed the roads to the summer mountain pastures and returned on the roads to the winter valley pastures. Roads were terribly rutty, ankle deep in dust or ankle deep in mud. Where there are fine bridges now, people before us would ford the rivers, hoping not to be swept away and drowned, as many were.

When the Maidu and Miwok (MY'-DUE and ME'-WUK) people alone lived in the Ringgold, Oak Hill, Hanks Exchange, Ladies Valley, Fort Jim, Newtown, Pleasant Valley, Wisconsin Bar, Starks Grade, Dry Gulch and Sly Park areas, before gold was discovered in 1848, most of the roads we use today were here, already going to the same villages; but, the roads were foot trails then, and the



villages had Maidu and Miwok names. When gold was discovered, the white man widened the trails to accomodate wagons, burned the villages to accomodate their tent houses, shanties and cabins, moved in, and renamed everything with inappropriate, less poetic, European names.

"... How about 8 claims?"

Kit Carson Pass (on Hwy 88), for example, was not discovered by Kit Carson that winter of 1844 that he carved

his name into a tree there, when the pass was named for him as Fremont's guide. The trail and pass had been described to Carson by an Indian he'd hired to accompany Fremont's party. This and other passes, used from the ancient days, were well known to the Indians by their own names, names we failed to record, names now forgotten.

During the centuries before white man brought horses from Europe, dogs had been the Indians' beast of burden. Indian trading parties used the trails and passes to reach inter-tribal ceremonial and trading centers anywhere in California and Nevada. Such was the village UM-BLEE-KAI'-YAH and its Talking Rock (in Hoyt's meadow just east of Oak Hill Road, an area we call Squaw Hollow, from Oak Hill Road to Bucks Bar Road along Squaw Hollow Creek, south of Pleasant Valley Road).

The local Maidu and Miwok tribes had many things to barter or to gamble, things desirable to Indians such as acorns, hard shelled digger pine nuts, elderberries, manzanita and toyon berries, soaproot fiber for weaving and whisk brooms, coiled baskets, mats and shelters woven of cat-tail leaves, colored fungus used in cosmetic paints, yellow and red flicker feathers, friction fire sticks of buckeye and poison oak wood, and root digging sticks of manzanita wood. Other tribes especially desired the Maidu and Miwok finished arrowheads of obsidian (volcanic glass), their straight and lightweight arrow shafts of syringa (wild mock-orange), but in particular, they wanted the local yew wood bows! You may remember reading about King Arthur's archers with their yew wood long-bows; well, the Maidu and Miwok people of the foothills used the springy sap wood of the Pacific yew tree to make their lightweight, short, thin, reflexed bows easily carried through the brush. To add cast to the thin wood of the bow, its front face was laminated with deer sinew (applied with fish oil glue), and the assembly sealed with the liquid pressed from Indian soap root. The bow was completed with a strong draw-string of stinging nettle fiber.

So, the traders came to Squaw Hollow with their best varieties of stock. The Wintun people, of northern Sacramento Valley, brought salmon flour and clam disks (money). The Shastan people, from the area of Mt. Shasta, brought green pigment for cosmetic paint, twined baskets, obsidian, shell beads, deer skins, furs, and braided grass skirts. The Plains Miwok people, of northern San Joaquin Valley, brought grass seed and fish. The Costanoan people, of Monterey, brought olivella shells (money). The Yokut people, from southern San Joaquin Valley, brought burden carrying dogs. But, from over the Sierra Nevada passes came the Mono, Washo and Piute people, bringing pinion nuts, pandora moth caterpillar and fly pupae (delicacies), red and white pigment for cosmetic paint, salt, pumice, obsidian, carrying baskets, seed beaters and winnowing trays, even buffalo and rabbit robes. From the northeast corner of California came the not too welcome Modoc people, not always to trade, but sometimes to steal the peaceful and docile Maidu and Miwok boys and girls to trade to the Pacific Northwest Indians as slaves!

The local Maidu and Miwok traders not only dealt in the products of their own people but as middlemen trading in surplus olivella shells, clam disks, obsidian, pandora moth caterpillars, and fly pupae.

Theirs was a working and successful social, economic, and religious culture reflecting energy, intelligence, and morality, providing (for themselves) a challenging and satisfying way of life until the European/American culture disrupted it.

MAIDU AND MIWOK CEREMONIAL DANCES OF PLEASANT VALLEY

In his diary he wrote, "July 21, 1854, Indian fandango at Squaw Hollow." September 12, 1856, took one horse-load of melons to the Indian fandango at Squaw Hollow, \$16.50." September 26, 1856, took a load of melons to the Indian fandango at Squaw Hollow, \$15.00." January 9, 1864, hauled a load of acorns from the Indian camp near Bartram's (Gutenberger's in 1988) for Indian George."

These notes are from the diary of Abraham Darlington, the pioneer miner, landowner, rancher, store keeper, member of the Grand Jury, El Dorado County District Attorney, Placerville School District Clerk, member of the Territorial Pioneers and the Methodist Church, who settled on land which had been the Indian village, WU-HU-LUK, located in the vicinity of today's Weber Creek bridge on Cedar Ravine Road. While driving on Cedar Ravine Road, the ruins of Abraham's house foundation and basement may be located on the west side of the road on the north side of the bridge; while across the road are the ruins of his barn foundation.

Sadly, the Indians' ceremonial dances were degenerating into "fandangos," (a Spanish word meaning lively dance) and losing their traditional heartfelt religious meanings of gratitude, sharing, and fulfillment as curious miners and settlers came to buy a "ticket" (a smoothed wooden chip) for a dollar to watch the excitement. But, there had been a time when the Indians lived here in accordance with their own culture, when their dances had been of several different kinds, each dance at its own time, its own place, its own purpose, excluding white man's gift of drunkenness.



Great Spirit Dance

Gratitude for autumn rains, which assured a fine acorn crop to come, was observed with the "all eating" dance performed in a dance house (round house) by large groups of men, women, and children all wearing special head dresses and clothed in all their wealth. Such dance houses were in many locations such as Squaw Hollow, atop Grand Point of Sturdevant Ridge, and south of Pleasant Valley on Skin Flat along Mt. Aukum Road. The "all eating" dance occurred quietly, two rings rotating in opposite directions, one ring of men and boys, the other of women and girls, all resting now and then, enjoying acorn porridge.

In the spring, clover blossom time was observed with the "great" dance out-of-doors, men dancing frantically; and then, dancing violently until exhausted and perspiring heavily, they'd plunge into a cold pond.

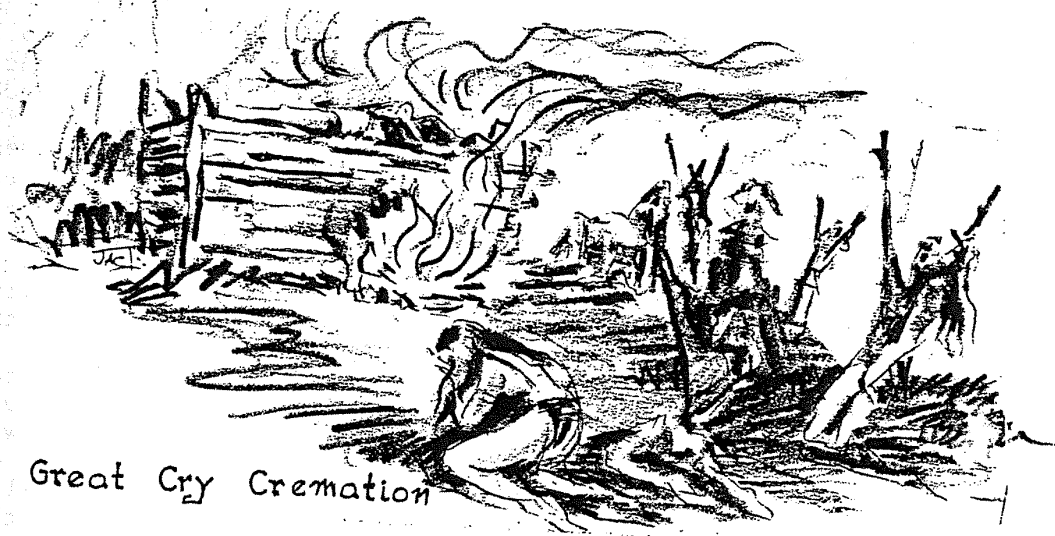
The ripening of manzanita berries was observed by the "little" dance, very similar to the "great" dance.

The "great spirit" dance would occur whenever the Indians wished to quiet the troublesome evil demons.

The "pleasure" dance was light-hearted and held out-of-doors anytime in the spring. It was danced only by the maidens. Some pleasant evening, after the day's work, maidens would join hands, swinging and circling merrily about an old man who chanted a lively step, while he sat in the grass. Then after much dancing, which became faster and faster, very suddenly the girls would break the circle with screams and laughter, fleeing in every direction. Young men, waiting nearby, pursued and playfully captured the escaping girls.

The "big time" dance (probably the source of the "Indian fandango") was like a giant party without booze, usually to entertain relatives, guests from other villages, or visiting traders. It was held in a round house. When the "big time" dance was to be held, runners were sent to invite guests; and when all was in readiness, the Chief would call for six male dancers, six female dancers, four singers and the players of the whistles, drums and rattles. All of the male entertainers were unclothed except for feathered head dresses, their quivers of arrows, their bows, and cosmetic paint on faces and bodies, altogether giving an appearance entertaining to the Indians (but frightening to any visiting white people). Everyone would crowd into the round house to watch the dancers. Their movements in the dancing ring were simultaneous with the music of the whistles, the chant of the singers, and the rhythm of the rattles and drums; and their dogs howled along with them. Also in rhythm were the Indians' simultaneous great yells which were only occasional, startling, and could be heard over long distances. The "big time" dance never stopped until daybreak the next morning. Then the entertainers would bathe in the creek. All that day the entertainers, the traders, the men, women, and children would feast in the round house. Acorn soup, acorn bread, wild cabbage, deer meat and squirrel meat were divided with everyone. After feasting, trading with the guest traders could begin; and, the Chief called for those who gamble to entertain everyone with the "hand" game (or "grass" game), shuffling a marked bone with an unmarked bone. Everyone could bet on the outcome as the gamblers shuffled the bones all night long for as long as three nights in

a row. Beaded belts, abalone belts, weapons, blankets and baskets changed hands again and again as gambling scores were kept on counting sticks. If a man had a basket weaving wife, he'd bet the baskets she had yet to weave. During mid-day, everyone rested from feasting and the entertainment. If the guests were of a hostile or not well known village, the women and children of the visitors waited in the woods while the "big time" began with the local Chief passing around the peace pipe. One pipefull of Indian tobacco was enough to provide a puff or two for each Indian, dizzying him, and then friendship speeches began. As each man had his say, everyone shouted approval ... and yet, all the time, every man had his quiver of arrows and his bow well strung and ready to grab the moment anything went wrong. After the pipe was smoked and the friendship speeches were over, the women and



Great Cry Cremation

children were escorted to the ceremonial place and the "big time" dances, feasting, trading, and gambling began. A note of interest, the whistles were made of hollow willow sticks, and sometimes they were double, each whistle with two or three finger holes and about the size of a fife. When played in unison in the Indian rhythm, the whistles sounded like a turning wheel squeaking the two clear tones in rapid succession. The rattles simply were rawhide bags allowed to harden while containing a few pebbles.

But, of all the great dances in the foothills, the most solemn to the Indian (and most frightful to the European) was the "weeping" dance, or "great cry", when the Indians cremated their dead on great cribs of pitch pine wood. A "weeping" dance could occur anytime an Indian died; or, the bodies could be held for the annual "weeping" dance and cremation late in August (the Indians' New Years Eve) when gifts were burned for the dead. You see, we and the Indians know that each thing (i.e., a human, a basket, a plate of food, a weapon, everything) exists temporarily in a form one can see, feel, taste, smell, even hear; but, most Indians understand that all things have another form of existence, a form you cannot see, feel, taste, smell, or hear,

just as real and useful as the sensed things, but forever. The local Maidu and Miwok people believed that the unsensed forever existence of anything is released, by cremating it, to join their ancestors, and that cremated gifts could be used by their ancestors, with whom the Maidu and Miwok people held a mutually supportive relationship.

The greatest honor the dead could be given was for his body to be flexed and bound into the crouched (fetal) position, placed into a bear skin with his wealth and the gifts of friends, and then the skin sewn closed for cremation in his own dwelling, making it the center of the "weeping" dance. If the cremation occurred elsewhere, the dwelling was burned afterward.

A new widow used razor-sharp obsidian chips, or a hot coal on the end of a stick, to trim her long black hair close to her scalp; then, she would mix the ashes of her husband with pine-pitch and smear them on her face, never to be removed deliberately. Though there was no glamour in her appearance, there was great beauty in her expression of grief and reverence. A surviving husband or wife would wear a mourning necklace for five anniversaries of the spouse's death. How many European emigrants were so careful with the memory of their loved ones? But then, many Europeans believe our ancestors dead and uninvolved, while the Indian believes ancestors to be alive in a freer form, and very much involved.

Now, the purpose of the annual "weeping" or "great cry" dance, late in August on Indians' New Years Eve, was to call the dead relatives and friends to accept offerings of food, tools, weapons, clothing and ornaments; and they called to the dead with great crying sounds at a sacred ceremonial ground well known to both the living and the dead. All the offerings were newly made and the finest that could be provided. All were hung on twelve to fifteen feet tall leafless branches set in a half-circle about a great burning fire. On the opposite side of the fire, blankets were hung in a half-circle to reflect the firelight brightly upon the hanging offerings, looking like Christmas trees.

In the evening twilight, the men and women would begin a mournful wailing and crying for the dead of the year. Shortly, they'd rise and form a circle around the fire, between the fire and the offerings, commencing a dance accompanied by the hoarse and deathly rattle of the chant, so terrible to the European ear. For hours and hours the Indians would dance and wail slowly and heavily, now and then casting some offering, from the boughs, into the fire. All through the night dancing continued, becoming more frenzied, the crying more frantic; and faster were the offerings hurled into the fire. With the most unnerving yells and whoops, the Indians leaped in the firelight, their perspiring bodies and painted faces glistening like demons in the dark, terrifying to the European eye. Now and then, a widow would be restrained from throwing herself into the great heap of coals; and then in her grief, she would strike her head forcefully against a tree trunk!

With the first dawning of the new year's day, the last of the offerings were whirled into the fire lest a "ghost" might depart disappointed and withhold its favor and strength necessary to the tribe during the year. And though some of the

Indians would be found lying on the ground, exhausted, others would be squatting around the fire in two's, counting on their fingers, in tying strings of shell money, handing over or receiving shells, beads or other valuables to clear old debts before the new year would begin, while still others were arranging contracts of marriage for the coming year.

Returning to their villages the next day, the Indians tramped silently, grieving and with drooping shoulders, no one speaking to them, and they spoke to no one.

Before the European interfered with the Indians' way of life, interrupted the Indians' seasonal harvests, burned the Indians' villages and stores of food, killed off the wild life, polluted the streams, fenced the land, demeaned the Indian culture, and compelled the Indian to accept as his own an alien European culture or be "imprisoned" on reservations, hungry and sick, if not hunted down and murdered, the Indians' way of life had been successful, challenging, and satisfying. The Indians were an admirable element of nature, rather than nature's destroyer.

Note: The two major "weeping" or "great cry" dance sites in the plan area were at Squaw Hollow just east of Oak Hill Road and south of Squaw Hollow Creek, the other at Cremation Meadow on Snow Ridge, east of Snows Road

As Native Americans Knew It.
THE LAND AND ITS CREATURES



...How can you buy the Sky?"

(Note: In 1854 the great white chief of Washington, President Franklin Pierce, made an offer for a large area of Indian land and promised a "reservation" for the people of the Dwamish tribe in the Pacific northwest. Chief Seattle's reply, published here in full, has been described as among the most beautiful and profound statements on the environment ever made.)

How can you buy or sell the sky, the warmth of the land? The idea is strange to us.

If we do not own the freshness of the air and the sparkle of the water, how can you buy them?

Every part of this earth is sacred to my people. Every shining pine needle, every sandy shore, every mist in the dark woods, every clearing and humming insect is holy in the memory and experience of my people. The sap which courses through the trees carries the memories of the red man.

The white man's dead forget the country of their birth when they go to walk among the stars. Our dead never forget this beautiful earth, for it is the mother of the red man. We are part

of the earth and it is part of us. The perfumed flowers are our sisters, the deer, the horse, the great eagle, these are our brothers. The rocky crests, the juice of the meadows, the body heat of the pony, and man - all belong to the same family.

So, when the great chief in Washington sends word that he wishes to buy our land, he asks much of us. The great chief sends word he will reserve us a place so that we can live comfortably to ourselves. He will be our father and we will be his children. So we will consider your offer to buy our land. But it will not be easy. For this land is sacred to us.

This shining water that moves in the streams and rivers is not just water but the blood of our ancestors. If we sell you land, you must remember that it is sacred, and you must teach your children that it is sacred and that each ghostly reflection in the clear water of the lakes tells of events and memories in the life of my people. The water's murmur is the voice of my father's father.

The rivers are our brothers, they quench our thirst. The rivers carry our canoes, and feed our children. If we sell you our land, you must remember and teach your children, that the rivers are our brothers, and yours, and you must henceforth give the rivers the kindness you would give any brother.

We know that the white man does not understand our ways. One portion of the land is the same to him as the next, for he is a stranger who comes in the night and takes from the land whatever he needs. The earth is not his brother, but his enemy, and when he has conquered it he moves on. He leaves his father's graves and his children's birthright are forgotten. He treats his mother, the earth, and his brother, the sky, as things to be bought, plundered, sold like sheep or bright beads. His appetite will devour the earth and leave behind only a desert.

I do not know. Our ways are different from your ways. The sight of your cities pains the eyes of the red man. But perhaps it is because the red man is a savage and does not understand.

There is no quiet place in the white man's cities. No place to hear the unfurling of leaves in the spring, or the rustle of an insect's wings. But perhaps it is because I am a savage and do not understand. The clatter only seems to insult the ears. And what is there to life if a man cannot hear the lonely cry of the whippoorwill or the arguments of the frogs around a pond at night. I am a red man and do not understand. The Indian prefers the soft sound of the wind darting over the face of a pond, and the smell of the wind itself, cleansed by a mid-day rain, or scented with the pinion pine.

The air is precious to the red man, for all things share the same breath - the beast, the tree, the man, they all share the same breath. The white man does not seem to notice the air he breathes. Like a man dying for many days, he is numb to the stench. But if we sell you our land, you must remember that the air is precious to us, that the air shares its spirit with all the life it supports. The wind that gave our grandfather his first breath also receives his last sigh. And if we sell you our land, you must keep it apart and sacred, as a place where even the white man can go to taste the wind that is sweetened by the meadow's flowers.

So we will consider your offer to buy our land. If we decide to accept, I will make one condition: The white man must treat the beasts of this land as his brothers.

I am a savage and do not understand any other way. I have seen a thousand rotting buffalos on the prairie, left by the white man who shot them from a passing train. I am a savage and do not understand how the smoking iron horse can be more important than the buffalo we kill only to stay alive.

What is man without the beasts? If all the beasts were gone, man would die from a great loneliness of spirit. For whatever happens to the beasts soon happens to man. All things are connected.

You must teach your children that the ground beneath their feet is the ashes of our grandfathers. So they will respect the land, tell your children that the earth is rich with the lives of our kin. Tell your children what we have taught our children, that the earth is our mother. What ever befalls the earth befalls the sons of the earth. If men spit upon the ground, they spit upon themselves.

This we know: The earth does not belong to man; man belongs to the earth. This we know. All things are connected like the blood which unites one family. All things are connected.

Whatever befalls the earth befalls the sons of the earth. Man did not weave the web of life - he is merely a strand in it. Whatever he does to the web, he does to himself.

Even the white man, whose god walks and talks with him as friend to friend, cannot be exempt from the common destiny. We may be brothers after all. We shall see. One thing we know, which the white man may one day discover - Our God is the same God. You may think now that you own Him as you wish to own our land; but, you cannot. He is the God of man, and His compassion is equal for the red man and the white. The earth is precious to Him and to harm the earth is to heap contempt on its creator. The whites too shall pass; perhaps sooner than all the other tribes. Contaminate your bed and you will one night suffocate in your own waste.

But in your perishing you will shine brightly, fired by the strength of the God who brought you to this land and for some special purpose gave you domination over this land and over the red man. That destiny is a mystery to us, for we do not understand when the buffalo are all slaughtered, the wild horses tamed, the secret corners of the forest heavy with the scent of many men, and the view of the ripe hills blotted out by talking wires. Where is the thicket? Gone. Where is the eagle? Gone. The end of living and the beginning of survival.

As The Native Americans Knew It.
STATEMENT BY THE PEACEMAKER.



"If any man or any nation outside of the Five Nations shall show a desire to obey the laws of the Great Peace ... they may trace the Roots to their source ... and they shall be welcomed to take shelter beneath the tree..."

Also, "Think not forever of yourselves, oh Chiefs, nor of your own generation. Think of continuing generations of our families, think of our grandchildren and of those yet unborn, whose faces are coming from beneath the ground."

The Peacemaker formed the Iroquois Confederacy long before white man set foot on the Great Turtle Island (America). Peacemaker, a luminous figure, traveled in a white stone canoe as a sign that the Creator had sent him. Among the Mohawk, he met an exiled Onondaga named Ayawentha (or Hiawatha, an Iroquois name mistakenly used by poet Henry Wadsworth Longfellow for the Ojibwa hero in his Song of Hiawatha). Together, the two persuaded the warring Five Nations to join in "Great Peace" based on a "great binding law." The fifty chiefs of the first Grand Council assembled on Onondaga Lake's shore, the Peacemaker planted the original Tree of Peace, and made his statement, partly quoted above. It was beneath this tree where the Five Nations buried their weapons of war. The white pine grew to be a magnificent tree with four long roots, called the "white roots for peace", stretching out from the tree in the four sacred directions.

It is to be noted that the Iroquois Confederacy very probably was the model which suggested to Benjamin Franklin the federal union for the 13 American colonies. Franklin even suggested that the proposed federal legislature be called the Grand Council.



United Firefighters of Los Angeles City

Local 112, International Association of Fire Fighters

2014 SEP 12 AM

September 11, 2014

Chief Terrazas, Fire Chief
Los Angeles Fire Department
200 North Main Street, Suite 1800
Los Angeles, California 90012

Chief Terrazas,

UFLAC has learned that the Department and City plan to install and/or allow the installation of cellular phone transmission towers or radio antennas at or near several of the work locations of our represented members.

This letter is intended to put you and the Department and City on written notice that towers and antennas such as these pose significant health and safety risks – including, but not limited to, serious injury, debilitating or fatal disease, and accidental death - to those living or working nearby.

The Department and City must immediately cease in the planning, installation preparation, installation and/or allowing the installation of any and all cellular phone transmission towers or radio antennas at or near the work locations of UFLAC's bargaining unit members and must immediately deactivate and remove them or cause them to be deactivated and removed where and if they have been installed.

Thank you for your immediate attention to this urgent health and safety matter.

Sincerely,

Frank Lima
President

FL/mr
opeiu #537
afl-cio-clc





UNITED FIREFIGHTERS
of
LOS ANGELES CITY
Local 112 IAFF AFL-CIO-CLC

2014 OCT - 8 AM 11:19
OFFICE OF THE
FIRE CHIEF

September 24, 2014

Ralph Terrazas, Fire Chief
Los Angeles City Fire Department
200 North Main Street
Los Angeles, California 90012

Chief Terrazas:

On September 11, 2014, we wrote to you expressing our health and safety concerns relating to the installation of cellular telephone transmission towers and radio antennas at many work locations of our bargaining unit members, including less than ten feet from our members' sleeping quarters. I have attached a copy of our September 11th letter for your convenience.

You have chosen to not respond in writing. Please understand that we fully intend to do everything within our power to protect the health and safety of our members and of the people living and working in the neighborhoods surrounding the planned installations.

We must therefore reiterate the demand in our September 11th letter that you immediately cease and desist from the installation and construction of these facilities and demand that you immediately meet and confer with this organization.

Sincerely,

Frank Lima
President

FL/mr
opeiu #537
afl-cio-clc





UNITED FIREFIGHTERS of LOS ANGELES CITY

Local 112 IAFF AFL-CIO-CLC

September 24, 2014

Honorable Mitch Englander
Chairman, Public Safety Committee
200 N. Spring Street
Los Angeles, CA 90012

Dear Chairman Englander:

Just two weeks ago, I was made aware of the Los Angeles Regional Interoperable Communications System (LA-RICS) plan to install Long Term Evolution (LTE) broadband communication equipment at more than 25 Los Angeles City Fire Stations and facilities. When I learned of this plan, I immediately informed Fire Chief Terrazas of our public safety concerns related to the health and safety of our Firefighters with the planned installation of these transmission towers and radio antennas being just a few yards away from our members' sleeping quarters (see attached). I received no response to this letter.

On Wednesday, October 1, the Los Angeles City Council's Public Safety Committee is scheduled to hear this item and give approval for the LA-RICS project to proceed. I am asking that this matter be continued until we are 100% certain that these communication towers will not have a negative health impact on our Firefighters, Paramedics, and the surrounding residents who live and work near facilities where tower installations are planned.

On September 18, a letter from Mayor Garcetti was transmitted to the City Council stating that the LA-RICS Authority was granted a California Environmental Quality Act (CEQA) exemption for the 231 proposed broadband sites. Full environmental clearance to begin construction on LA City sites has not even been granted yet. By waiving traditional CEQA requirements, there is an immediate red flag concern regarding this project. The fact that LA-RICS has not yet received full environmental clearance in accordance with the National Environmental Protection Act (NEPA) gives us additional reason for concern.

It's my understanding that in 2009, the Board of the Los Angeles Unified School District voted to ban cell sites on school property and increased setbacks near cell sites located near schools due to safety concerns. It's hard to understand why we have concluded that cell towers pose a risk to our children and school employees, yet LA-RICS is trying to install these same towers right next to our fire stations where our members spend more than one-third of their lives.

While I can appreciate that there is a September 2015 deadline to access federal funds for the completion of the LA-RICS project, it is inexcusable that once again our Firefighters in the field



were the last ones to know about a massive \$150 million dollar project that could jeopardize their health and safety. In fact, we were notified of the planned installations after a Firefighter in the field called to inform us that a contractor was at his fire station taking measurements for the planned project - which will be less than 10 feet away from their fire station. Nobody talked to us and we have not heard from one single expert who has told us that this project will be safe.

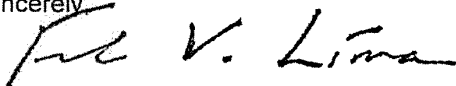
On behalf of more than 3,000 Firefighters, Paramedics, Dispatchers, Inspectors, and Pilots of the Los Angeles Fire Department who I am honored to represent, UFLAC will strongly oppose the use of Fire Stations as base locations for cell towers and/or antennas for the conduction of communication transmissions until a study with the highest scientific merit on health effects of exposure to low-intensity radiation is conducted and it is proven that such sites are not hazardous to the health of our members.

I am asking you to delay action on this item unless and until we can be given firm scientific evidence that proves the safety of the LA-RICS project.

I will also be sending separate communication to Chief Terrazas reiterating the position in our September 11th letter that the City must immediately cease and desist from the installation and construction of these facilities and demand that this installation be discussed as part of a meet and confer process with the United Firefighters of Los Angeles City.

Thank you for your careful consideration of this request.

Sincerely,



Frank Lima
President

FL/mr
opeiu #537
aff-cio-clc

CC: Honorable Eric Garcetti, Mayor of Los Angeles
Honorable Members of the Los Angeles City Council
Chief Ralph Terrazas, Los Angeles Fire Department
Board of Fire Commissioners
Ana Guerrero, Chief of Staff to Mayor
Dave Gillotte, President, Los Angeles County Firefighters, Local 1014
Harold Schaitberger, President, International Association of Firefighters
James Ferguson, International Association of Firefighters
Lou Paulson, President, California Professional Firefighters
Marvin Kropke, President IBEW Local 11
Brian D'Arcy, President IBEW Local 18

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Health, Safety & Medicine



INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS DIVISION OF OCCUPATIONAL HEALTH, SAFETY AND MEDICINE

Position on the Health Effects from Radio Frequency/Microwave (RF/MW) Radiation in Fire Department Facilities from Base Stations for Antennas and Towers for the Conduction of Cell Phone Transmissions

The International Association of Fire Fighters' position on locating cell towers commercial wireless infrastructure on fire department facilities, as adopted by its membership in August 2004 ⁽¹⁾, is that the IAFF oppose the use of fire stations as base stations for towers and/or antennas for the conduction of cell phone transmissions until a study with the highest scientific merit and integrity on health effects of exposure to low-intensity RF/MW radiation is conducted and it is proven that such sitings are not hazardous to the health of our members.

Further, the IAFF is investigating funding for a U.S. and Canadian study that would characterize exposures from RF/MW radiation in fire houses with and without cellular antennae, and examine the health status of the fire fighters as a function of their assignment in exposed or unexposed fire houses. Specifically, there is concern for the effects of radio frequency radiation on the central nervous system (CNS) and the immune system, as well as other metabolic effects observed in preliminary studies.

It is the belief of some international governments and regulatory bodies and of the wireless telecommunications industry that no consistent increases in health risk exist from exposure to RF/MW radiation unless the intensity of the radiation is sufficient to heat body tissue. However, it is important to note that these positions are based on non-continuous exposures to the general public to low intensity RF/MW radiation emitted from wireless telecommunications base stations. Furthermore, most studies that are the basis of this position are at least five years old and generally look at the safety of the phone itself. IAFF members are concerned about the effects of living directly under these antenna base stations for a considerable stationary period of time and on a daily basis. There are established biological effects from exposure to low-level RF/MW radiation. Such biological effects are recognized as markers of adverse health effects when they arise from exposure to toxic chemicals for example. The IAFF's efforts will attempt to establish whether there is a correlation between such biological effects and a health risk to fire fighters and emergency medical personnel due to the siting of cell phone antennas and base stations at fire stations and facilities where they work.

Background

Critical questions concerning the health effects and safety of RF/MW radiation remain. Accordingly, should we allow exposure of our fire fighters and emergency medical personnel to this radiation to continue for the next twenty years when there is ongoing controversy over many aspects of RF/MW health effects? While no one disagrees that serious health hazards occur when living cells in the body are heated, as happens with high intensity RF/MW exposure (just like in a microwave oven), scientists are currently investigating the health hazards of low intensity RF/MW exposure. Low intensity RF/MW exposure is exposure which does not raise the temperature of the living cells in the body.

Additionally, a National Institute of Environmental Health Sciences panel designated power frequency electromagnetic fields (ELF/EMF) as "possible human carcinogens." ⁽²⁾ In March 2002 The International Association on Research on Cancer of the World Health Organization also assigned this designation to ELF/EMF in Volume 80 of its *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans*. ⁽³⁾

Fixed antennas used for wireless telecommunications are referred to as cellular base stations, cell stations, PCS ("Personal Communications Service") stations or telephone transmission towers. These base stations consist of antennas and electronic equipment. Because the antennas need to be high in the air, they are often located on towers, poles, water tanks, or rooftops. Typical heights for freestanding base station towers are 50-200 feet.

Some base stations use antennas that look like poles, 10 to 15 feet in length, that are referred to as "omni-directional" antennas. These types of antennas are usually found in rural areas. In urban and suburban areas, wireless providers now more commonly use panel or sector antennas for their base stations. These antennas consist of rectangular panels, about 1 by 4 feet in dimension. The antennas are usually arranged in three groups of three antennas each. One antenna in each group is used to transmit signals to wireless phones, and the other two antennas in each group are used to receive signals from wireless phones.

At any base station site, the amount of RF/MW radiation produced depends on the number of radio channels (transmitters) per antenna and the power of each transmitter. Typically, 21 channels per antenna sector are available. For a typical cell site using sector antennas, each of the three transmitting antennas could be connected to up to 21 transmitters for a total of 63 transmitters. When omni-directional antennas are used, a cellular base station could theoretically use up to 96 transmitters. Base stations used for PCS communications generally require fewer transmitters than those used for cellular radio transmissions, since PCS carriers usually have a higher density of base station antenna sites.

The electromagnetic RF/MW radiation transmitted from base station antennas travel toward the horizon in relatively narrow paths. The individual pattern for a single array of sector antennas is wedge-shaped, like a piece of pie. Cellular and PCS base stations in the United States are required to comply with limits for exposure recommended by expert organizations and endorsed by government agencies responsible for health and safety. When cellular and PCS antennas are mounted on rooftops, RF/MW radiation levels on that roof or on others near by would be greater than those typically encountered on the ground.

The telecommunications industry claims cellular antennas are safe because the RF/MW radiation they produce is too weak to cause heating, i.e., a "thermal effect." They point to "safety standards" from groups such as ANSI/IEEE or ICNIRP to support their claims. But these groups have explicitly stated that their claims of "safe RF/MW radiation exposure is harmless" rest on the fact that it is too weak to produce a rise in body temperature, a "thermal effect."⁽⁴⁾

There is a large body of internationally accepted scientific evidence which points to the existence of non-thermal effects of RF/MW radiation. The issue at the present time is not whether such evidence exists, but rather what weight to give it.

Internationally acknowledged experts in the field of RF/MW radiation research have shown that RF/MW transmissions of the type used in digital cellular antennas and phones can have critical effects on cell cultures, animals, and people in laboratories and have also found epidemiological evidence (studies of communities, not in the laboratory) of serious health effects at "non-thermal levels," where the intensity of the RF/MW radiation was too low to cause heating. They have found:

- Increased cell growth of brain cancer cells ⁽⁵⁾
- A doubling of the rate of lymphoma in mice ⁽⁶⁾
- Changes in tumor growth in rats ⁽⁷⁾
- An increased number of tumors in rats ⁽⁸⁾
- Increased single- and double-strand breaks in DNA, our genetic material ⁽⁹⁾
- 2 to 4 times as many cancers in Polish soldiers exposed to RF ⁽¹⁰⁾

- More childhood leukemia in children exposed to RF ⁽¹¹⁾
- Changes in sleep patterns and REM type sleep ⁽¹²⁾
- Headaches caused by RF/MW radiation exposure ⁽¹³⁾
- Neurologic changes ⁽¹⁴⁾ including:
 - Changes in the blood-brain-barrier ⁽¹⁵⁾
 - Changes in cellular morphology (including cell death) ⁽¹⁶⁾
 - Changes in neural electrophysiology (EEG) ⁽¹⁷⁾
 - Changes in neurotransmitters (which affect motivation and pain perception) ⁽¹⁸⁾
 - Metabolic changes (of calcium ions, for instance) ⁽¹⁹⁾
 - Cytogenetic effects (which can affect cancer, Alzheimer's, neurodegenerative diseases) ⁽²⁰⁾
- Decreased memory, attention, and slower reaction time in school children ⁽²¹⁾
- Retarded learning in rats indicating a deficit in spatial "working memory" ⁽²²⁾
- Increased blood pressure in healthy men ⁽²³⁾
- Damage to eye cells when combined with commonly used glaucoma medications ⁽²⁴⁾

Many national and international organizations have recognized the need to define the true risk of low intensity, non-thermal RF/MW radiation exposure, calling for intensive scientific investigation to answer the open questions. These include:

- The World Health Organization, noting reports of "cancer, reduced fertility, memory loss, and adverse changes in the behavior and development of children." ⁽²⁵⁾
- The U. S. Food and Drug Administration (FDA) ⁽²⁶⁾
- The International Agency for Research on Cancer (IARC) ⁽²⁷⁾
- The Swedish Work Environmental Fund ⁽²⁸⁾
- The National Cancer Institute (NCI) ⁽²⁹⁾
- The European Commission (EC) ⁽³⁰⁾
- New Zealand's Ministry of Health ⁽³¹⁾
- National Health and Medical Research Council of Australia ⁽³²⁾
- Commonwealth Scientific Industrial Research Organization of Australia (CSIRO) ⁽³³⁾
- The Royal Society of Canada expert group report prepared for Health Canada ⁽³⁴⁾
- European Union's REFLEX Project (Risk Evaluation of Potential Environmental Hazards from Low Frequency Electromagnetic Field Exposure Using Sensitive *in vitro* Methods) ⁽³⁵⁾
- The Independent Group on Electromagnetic Fields of the Swedish Radiation Protection Board (SSI) ⁽³⁶⁾
- The United Kingdom's National Radiological Protection Board (NRPB) ⁽³⁷⁾
- The EMF-Team Finland's Helsinki Appeal 2005 ⁽³⁸⁾

Non-thermal effects are recognized by experts on RF/MW radiation and health to be potential health hazards. Safe levels of RF/MW exposure for these low intensity, non-thermal effects have not yet been established.

The FDA has explicitly rejected claims that cellular phones are "safe." ⁽³⁹⁾

The Environmental Protection Agency (EPA) has stated repeatedly that the current (ANSI/IEEE) RF/MW safety standards protect only against thermal effects. ⁽⁴⁰⁾

Many scientists and physicians question the safety of exposure to RF/MW radiation. The CSIRO study, for example, notes that there are no clear cutoff levels at which low intensity RF/MW exposure has no effect, and that the results of ongoing studies will take years to analyze. ⁽⁴¹⁾

Internationally, researchers and physicians have issued statements that biological effects from low-intensity RF/MW radiation exposure are scientifically established:

- The 1998 Vienna-EMF Resolution ⁽⁴²⁾
- The 2000 Salzburg Resolution on Mobile Telecommunication Base Stations ⁽⁴³⁾
- The 2002 Catania Resolution ⁽⁴⁴⁾
- The 2002 Freiburger Appeal ⁽⁴⁵⁾
- The 2004 Report of the European Union's REFLEX Project (Risk Evaluation of Potential Environmental Hazards from Low Frequency Electromagnetic Field Exposure Using Sensitive *in vitro* Methods) ⁽⁴⁶⁾
- The 2004 Second Annual Report from Sweden's Radiation Protection Board (SSI) Independent Expert Group on Electromagnetic Fields Recent Research on Mobile Telephony and Health Risks ⁽⁴⁷⁾
- Mobile Phones and Health 2004: Report by the Board of NRPB (The UK's National Radiological Protection Board) ⁽⁴⁸⁾

The county of Palm Beach, Florida, the City of Los Angeles, California, and the country of New Zealand have all prohibited cell phone base stations and antennas near schools due to safety concerns. The British Columbia Confederation of Parent Advisory Councils [BCCPAC] passed a resolution in 2003 banning cellular antennae from schools and school grounds. This organization is comparable to the Parent Teachers Association (PTA) in the United States. The resolution was directed to B.C. Ministry of Education, B.C. Ministry of Children and Family Development, B.C. School Trustees Association, and B.C. Association of Municipalities.

US Government Information

In the United States, the Federal Communications Commission (FCC) has used safety guidelines for RF/MW radiation environmental exposure since 1985.

The FCC guidelines for human exposure to RF/MW radiation are derived from the recommendations of two organizations, the National Council on Radiation Protection and Measurements (NCRP) and the Institute of Electrical and Electronics Engineers (IEEE). In both cases, the recommendations were developed by scientific and engineering experts drawn from industry, government, and academia after extensive reviews of the scientific literature related to the biological effects of RF/MW radiation.

Many countries in Europe and elsewhere use exposure guidelines developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The ICNIRP safety limits are generally similar to those of the NCRP and IEEE, with a few exceptions. For example, ICNIRP recommends different exposure levels in the lower and upper frequency ranges and for localized exposure from certain products such as hand-held wireless telephones. Currently, the World Health Organization is working to provide a framework for international harmonization of RF/MW radiation safety standards.

In order to affirm conformity to standards regarding heating of tissue, measurements are time averaged over 0.1 hours [6 minutes]. This method eliminates any spikes in the readings. Computer power bars have surge protectors to prevent damage to computers. **Fire fighters and emergency medical personnel do not!**

The NCRP, IEEE, and ICNIRP all have identified a whole-body Specific Absorption Rate (SAR) value of 4 watts per kilogram (4 W/kg) as a threshold level of exposure at which harmful biological thermal effects due to tissue heating may occur. Exposure guidelines in terms of field strength, power density and localized SAR were then derived from this threshold value. In addition, the NCRP, IEEE, and ICNIRP guidelines vary depending on the frequency of the RF/MW radiation exposure. This is due to the finding that whole-body human absorption of RF/MW radiation varies with the frequency of the RF signal. The most restrictive limits on whole-body exposure are in the frequency range of 30-300 MHz where the human body absorbs RF/MW energy most efficiently. For products that only expose part of the body, such as wireless phones, exposure limits in terms of SAR only are specified.

Similarly, the exposure limits used by the FCC are expressed in terms of SAR, electric and magnetic field strength, and power density for transmitters operating at frequencies from 300 kHz to 100 GHz. The specific values can be found in two FCC bulletins, OET Bulletins 56 and 65.

OET Bulletin 56, "Questions and Answers about Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields" was designed to provide factual information to the public by answering some of the most commonly asked questions. It includes the latest information on FCC guidelines for human exposure to RF/MW radiation. Further information and a downloadable version of Bulletin 56 can be found at: <http://www.fcc.gov/oet/info/documents/bulletins/#56> (<http://www.fcc.gov/oet/info/documents/bulletins/#56>)

OET Bulletin 65, "Evaluating Compliance With FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" was prepared to provide assistance in determining whether proposed or existing transmitting facilities, operations or devices comply with limits for human exposure to RF/MW radiation adopted by the Federal Communications Commission (FCC). Further information and a downloadable version of Bulletin 65 can be found at: <http://www.fcc.gov/oet/info/documents/bulletins/#65> (<http://www.fcc.gov/oet/info/documents/bulletins/#65>)

The FCC authorizes and licenses products, transmitters, and facilities that generate RF and microwave radiation. It has jurisdiction over all transmitting services in the U.S. except those specifically operated by the Federal Government. Under the National Environmental Policy Act of 1969 (NEPA), the FCC has certain responsibilities to consider whether its actions will significantly affect the quality of the human environment. Therefore, FCC approval and licensing of transmitters and facilities must be evaluated for significant impact on the environment. Human exposure to RF radiation emitted by FCC-regulated transmitters is one of several factors that must be considered in such environmental evaluations. In 1996, the FCC revised its guidelines for RF/MW radiation exposure as a result of a multi-year proceeding and as required by the Telecommunications Act of 1996.

For further information and answers to questions about the safety of RF/MW radiation from transmitters and facilities regulated by the FCC go to <http://www.fcc.gov/oet/rfsafety/rf-faqs.html> (<http://www.fcc.gov/oet/rfsafety/rf-faqs.html>).

Canadian Government Information

Industry Canada is the organization that sets regulatory requirements for electromagnetic spectrum management and radio equipment in Canada. Industry Canada establishes standards for equipment certification and, as part of these standards, developed RSS-102, which specifies permissible radiofrequency RF/MW radiation levels. For this purpose, Industry Canada adopted the limits outlined in Health Canada's Safety-Code 6, which is a guideline document for limiting RF exposure. A downloadable version of "RSS-102 - Evaluation Procedure for Mobile and Portable Radio Transmitters with respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields", as well as additional information can be found at: [http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwapj/rss102.pdf/\\$FILE/rss102.pdf](http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwapj/rss102.pdf/$FILE/rss102.pdf) ([http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwapj/rss102.pdf/\\$FILE/rss102.pdf](http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwapj/rss102.pdf/$FILE/rss102.pdf))

Safety Code 6 specifies the requirements for the use of radiation emitting devices. This Code replaces the previous Safety Code 6 - EHD-TR-160. A downloadable version of "Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz TO 300 GHz - Safety Code 6", as well as further detailed information can be found at <http://www.hc-sc.gc.ca/hecs-sesc/ccrpb/publication/99ehd237/toc.htm> (<http://www.hc-sc.gc.ca/hecs-sesc/ccrpb/publication/99ehd237/toc.htm>).

US and Canadian Legal Issues

Although some local and state governments have enacted rules and regulations about human exposure to RF/MW radiation in the past, the Telecommunications Act of 1996 requires the United States Federal Government to control human exposure to RF/MW radiation. In particular, Section 704 of the Act states that, "No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions." Further information on federal authority and FCC policy is available in a fact sheet from the FCC's Wireless Telecommunications Bureau at www.fcc.gov/wtb (<http://www.fcc.gov/wtb>).

In a recent opinion filed by Senior Circuit Judge Stephen F. Williams, No. 03-1336 *EMR Network v. Federal Communications Commission and United States of America*, the Court upheld the FCC's decision not to initiate an inquiry on the need to revise its regulations to address non-thermal effects of radiofrequency (RF) radiation from the facilities and products subject to FCC regulation as EMR Network had requested in its September 2001 Petition for Inquiry.

At the request of the EMR Network, the EMR Policy Institute provided legal and research support for this appeal. On January 13, 2005, a Petition for Rehearing *en banc* by the full panel of judges at the DC Circuit Court of Appeals was filed. Briefs, background documents and the DC Circuit decision are found at: http://www.emrpolicy.org/litigation/case_law/index.htm (http://www.emrpolicy.org/litigation/case_law/index.htm).

The Toronto Medical Officer of Health for the Toronto Board of Health recommended to Health Canada that public exposure limits for RF/MW radiation be made 100 times stricter; however the recommendation was not allowed, since, as in the US, only the Canadian federal government can regulate RF/MW radiation exposure level.

World Health Organization Efforts

In 1996, the World Health Organization (WHO) established the International EMF Project to review the scientific literature and work towards resolution of health concerns over the use of RF/MW technology. WHO maintains a Web site that provides addition information on this project and about RF/MW biological effects and research. For further information go to <http://www.who.int/peh-emf/en/> (<http://www.who.int/peh-emf/en/>).

Conclusion

For decades, the International Association of Fire Fighters has been directly involved in protecting and promoting the health and safety of our membership. However, we simply don't know at this time what the possible health consequences of long-term-exposure to low-intensity RF/MW radiation of the type used by the cell phone base stations and antennas will be. No one knows—the data just aren't there. The chairman of the International Commission on Non-Ionizing Radiation Protection (ICNIRP), one of the leading international organizations which formulated the current RF/MW radiation exposure guidelines, has stated that the guidelines include "no consideration regarding prudent avoidance" for health effects for which evidence is less than conclusive⁽⁴⁹⁾

Again, fire department facilities, where fire fighters and emergency response personnel live and work are not the proper place for a technology which could endanger their health and safety

The only reasonable and responsible course is to conduct a study of the highest scientific merit and integrity on the RF/MW radiation health effects to our membership and, in the interim, oppose the use of fire stations as base stations for towers and/or antennas for the conduction of cell phone transmissions until it is proven that such sitings are not hazardous to the health of our members.

Footnotes

[back] 1. Revised and Amended IAFF Resolution No. 15; August 2004

Study of Firefighters Exposed to Radio Frequency (RF) Radiation from Cell Towers/Masts

WHEREAS, fire stations across the United States and Canada are being sought by wireless companies as base stations for the antennas and towers for the conduction of cell phone transmissions; and

WHEREAS, many firefighters who are living with cell towers on or adjacent to their stations are paying a substantial price in terms of physical and mental health. As first responders and protectors of the general public, it is crucial that firefighters are functioning at optimal cognitive and physical capacity at all times; and

WHEREAS, the brain is the first organ to be affected by RF radiation and symptoms manifest in a multitude of neurological conditions including migraine headaches, extreme fatigue, disorientation, slowed reaction time, vertigo, vital memory loss and attention deficit amidst life threatening emergencies; and

WHEREAS, most of the firefighters who are experiencing symptoms can attribute the onset to the first week(s) these towers/antennas were activated; and

WHEREAS, RF radiation is emitted by these cellular antennas and RF radiation can penetrate every living cell, including plants, animals and humans; and

WHEREAS, both the U. S. and Canadian governments established regulatory limits for RF radiation based on thermal (heat) measurements with no regard for the adverse health effects from non-thermal radiation which is proven to harm the human brain and immune system; and

WHEREAS, the U. S. Environmental Protection Agency stated in a July 16, 2002, letter, "Federal health and safety agencies have not yet developed policies concerning possible risk from long-term, non-thermal exposures. The FCC's exposure guideline is considered protective of effects arising from a thermal mechanism (RF radiation from cell towers is non-thermal) but not from all possible mechanisms. Therefore, the generalization by many that the guidelines protecting human beings from harm by any or all mechanisms is not justified"; and

WHEREAS, an Expert Panel Report requested by the Royal Society of Canada prepared for Health Canada (1999) stated that, "Exposure to RF fields at intensities far less than levels required to produce measurable heating can cause effects in cells and tissues. These biological effects include alterations in the activity of the enzyme ornithine decarboxylase, in calcium regulation, and in the permeability of the blood-brain barrier. Some of these biological effects brought about by non-thermal exposure levels of RF

could potentially be associated with adverse health effects"; and

WHEREAS, based on concerns over growing scientific evidence of dangers from RF radiation, an international conference was convened in Salzburg, Austria, in the summer of 2000 where renowned scientists declared the upper-most RF radiation exposure limit from a tower-mast should be 1/10th of 1 microwatt (Note that 1/10th of 1 microwatt is 10,000 times lower than the uppermost limit allowed by the U. S. or Canada.); and it should be noted this limit was set because of study results showing brain wave changes at 1/10th of 1 microwatt; and

WHEREAS, in a recently cleared paper by Dr. Richard A. Albanese of the U. S. Air Force, a highly recognized physician in the area of the impact of radiation on the human body, Dr. Albanese states, "I would ask a good faith effort in achieving as low exposure rates as are possible within reasonable financial constraints. Also I would fund targeted studies using animal subjects and human groups living or working in high radiation settings or heavy cellular phone users, emphasizing disease causations. I urge acceptance of the ideal that there should be no unmonitored occupational or environmental exposures whose associated disease rates are unknown." (The opinions expressed herein are those of Dr. Albanese, and do not reflect the policies of the United States Air Force.); and

WHEREAS, recently a study, not affiliated with the wireless industry, was conducted of firefighters exposed to RF radiation from cell towers/antennas affixed to their stations.** The study revealed brain damage that can be differentiated from chemical causation (such as inhalation of toxic smoke) suggesting RF radiation as the cause of the brain damage found on SPECT scans; and

WHEREAS, firefighters are the protectors of people and property and should be protected under the Precautionary Principle of Science and therefore, unless radiation is proven safe and harmless, cellular antennas should not be placed on or near fire stations; therefore be it

RESOLVED, That the IAFF shall seek funding for an initial U. S. and Canadian study with the highest scientific merit and integrity, contrasting firefighters with residence in stations with towers to firefighters without similar exposure; and be it further

RESOLVED, That in accordance with the results of the study, the IAFF will establish protective policy measures with the health and safety of all firefighters as the paramount objective; and be it further

RESOLVED, That the IAFF oppose the use of fire stations as base stations for antennas and towers for the conduction of cell phone transmissions until such installations are proven not to be hazardous to the health of our members.

**Note: A pilot study was conducted in 2004 of six California fire fighters working and sleeping in stations with towers. The study, conducted by Gunnar Heuser, M.D., PhD. of Agoura Hills, CA, focused on neurological symptoms of six fire fighters who had been working for up to five years in stations with cell towers. Those symptoms included slowed reaction time, lack of focus, lack of impulse control, severe headaches, anesthesia-like sleep, sleep deprivation, depression, and tremors. Dr. Heuser used functional brain scans - SPECT scans - to assess any changes in the brains of the six fire fighters as compared to healthy brains of men of the same age. Computerized psychological testing known as TOVA was used to study reaction time, impulse control, and attention span. The SPECT scans revealed a pattern of abnormal change which was concentrated over a wider area than would normally be seen in brains of individuals exposed to toxic inhalation, as might be expected from fighting fires. Dr. Heuser concluded the only plausible explanation at this time would be RF radiation exposure. Additionally, the TOVA testing revealed among the six fire fighters delayed reaction time, lack of impulse control, and difficulty in maintaining mental focus.

[back] 2. An international blue ribbon panel assembled by the National Institute of Environmental Health Sciences (NIEHS) designated power frequency electromagnetic fields (EMF) as "possible human carcinogens" on June 24, 1998. The panel's decision was based largely on the results of epidemiological studies of children exposed at home and workers exposed on the job. The evaluation of the EMF literature followed procedures developed by the International Agency for Research on Cancer (IARC), based in Lyon, France. The working group's report will be the basis for the NIEHS report to Congress on the EMF Research and Public Information Dissemination program (EMF RAPID). The National Radiological Protection Board (NRPB) of the United Kingdom noted that the views of its Advisory Group on Non-ionizing Radiation are "consistent with those of the NIEHS expert panel."

June 26, 1998 statement of the National Radiological Protection Board, cited in *Microwave News*, July/August 1998

[back] 3. *World Health Organization; International Agency for Research on Cancer; IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; Volume 80 Non-ionizing Radiation, Part 1: Static and Extremely Low-Frequency (ELF) Electric and Magnetic Fields; 2002; 429 pages; ISBN 92 832 1280 0; See <http://www-cie.iarc.fr/htdocs/monographs/vol80/80>. (<http://www-cie.iarc.fr/htdocs/monographs/vol80/80.html>)* This IARC Monograph provides the rationale for its designation of ELF/EMF as a possible human carcinogen. It states that:

A few studies on genetic effects have examined chromosomal aberrations and micronuclei in lymphocytes from workers exposed to ELF electric and magnetic fields. In these studies, confounding by genotoxic agents (tobacco, solvents) and comparability between the exposed and control groups are of concern. Thus, the studies reporting an increased frequency of chromosomal aberrations and micronuclei are difficult to interpret.

Many studies have been conducted to investigate the effects of ELF magnetic fields on various genetic end-points. Although increased DNA strand breaks have been reported in brain cells of exposed rodents, the results are inconclusive; most of the studies show no effects in mammalian cells exposed to magnetic fields alone at levels below 50 µT. However, extremely strong ELF magnetic fields have caused adverse genetic effects in some studies. In addition, several groups have reported that ELF magnetic fields enhance the effects of known DNA- and chromosome-damaging agents such as ionizing radiation.

The few animal studies on cancer-related non-genetic effects are inconclusive. Results on the effects on in-vitro cell proliferation and malignant transformation are inconsistent, but some studies suggest that ELF magnetic fields affect cell proliferation and modify cellular responses to other factors such as melatonin. An increase in apoptosis following exposure of various cell lines to ELF electric and magnetic fields has been reported in several studies with different exposure conditions. Numerous studies have investigated effects of ELF magnetic fields on cellular end-points associated with signal transduction, but the results are not consistent.

[back] 4. The International Commission on Non-ionizing Radiation Protection (ICNIRP) statement "Health Issues Related to the Use of Hand-Held Radiotelephones and Base Transmitters" of 1996 reads:

"Thermally mediated effects of RF fields have been studied in animals, including primates. These data suggest effects that will probably occur in humans subjected to whole body or localized heating sufficient to increase tissue temperatures by greater than 1C. They include the induction of opacities of the lens of the eye, possible effects on development and male fertility, various physiological and thermoregulatory responses to heat, and a decreased ability to perform mental tasks as body temperature increases. Similar effects have been reported in people subject to heat stress, for example while working in hot environments or by fever. The various effects are well established and form the biological basis for restricting occupational and public exposure to radiofrequency fields. In contrast, non-thermal effects are not well established and currently do not form a scientifically acceptable basis for restricting human exposure for frequencies used by hand-held radiotelephones and base stations."

International Commission on Non-ionizing Radiation Protection, "Health Issues Related to the Use of Hand-Held Radiotelephones and Base Transmitters," Health Physics 70:587-593, 1996

The ANSI/IEEE Standard for Safety Levels of 1992 similarly states:

"An extensive review of the literature revealed once again that the most sensitive measurements of potentially harmful biological effects were based on the disruption of ongoing behavior associated with an increase of body temperature in the presence of electromagnetic fields. Because of the paucity of reliable data on chronic exposures, IEEE Subcommittee IV focused on evidence of behavioral disruption under acute exposures, even disruption of a transient and fully reversible nature."

IEEE Standards Coordinating committee 28 on Non-ionizing Radiation Hazards: Standard for Safe Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 KHz to 300 GHz (ANSI/IEEE C95.1-1991), The Institute of Electrical and Electronics Engineers, New York, 1992.

[back] 5. Drs. Czerska, Casamento, Ning, and Davis (working for the Food and Drug Administration in 1997) using "a waveform identical to that used in digital cellular phones" at a power level within our current standards (SAR of 1.6 W/Kg, the maximum spatial peak exposure level recommended for the general population in the ANSI C95.1-1991 standard) found increases in cellular proliferation in human glioblastoma cells. This shows that "acceptable" levels of radiation can cause human cancer cells to multiply faster. The authors note that "because of reported associations between cellular phone exposure and the occurrence of a brain tumor, glioblastoma, a human glioblastoma cell line was used" in their research.

E.M. Czerska, J. Casamento, J. T. Ning, and C. Davis, "Effects of Radiofrequency Electromagnetic Radiation on Cell Proliferation," [Abstract presented on February 7, 1997 at the workshop 'Physical Characteristics and Possible Biological Effects of Microwaves Applied in Wireless Communication, Rockville, MD] E. M. Czerska, J. Casamento Centers for Devices and Radiological Health, Food and Drug Administration, Rockville, Maryland 20857, USA; H. T. Ning, Indian Health Service, Rockville, Maryland 20857, USA; C. Davis, Electrical Engineering Dept., Univ. of Maryland, College Park, Maryland 20742, USA

[back] 6. Dr. Michael Repacholi (in 1997, currently the director of the International Electromagnetic Fields Project at the World Health Organization) took one hundred transgenic mice and exposed some to radiation for two 30 minute periods a day for up to 18 months. He found that the exposed mice developed lymphomas (a type of cancer) at twice the rate of the unexposed mice. While telecommunications industry spokespersons criticized the experiment for using mice with a mutation which predisposed them to cancer (transgenic) the researchers pointed out that "some individuals inherit mutations in other genes...that predispose them to develop cancer, and these individuals may comprise a subpopulation at special risk from agents that would pose an otherwise insignificant risk of cancer."

Dr. Repacholi stated "I believe this is the first animal study showing a true non-thermal effect." He repeated the experiment in 1998 using 50 Hz fields instead of the 900 MHz pulsed radiation (the type used by cellular phones) used in the original experiment and found no cancer risk. He stated that this new data had implications for his original cellular phone study: "the control groups for both our RF and 50 Hz field studies showed no statistical differences, which lessens the possibility that the RF/MW radiation study result was a chance event or due to errors in methodology."

It is extremely important to note that Dr. Michael Repacholi was Chairman of the ICNIRP at the time its Statement on Health Issues Related to the Use of Hand-Held Radiotelephones and Base Transmitters was developed in 1996.

M. Repacholi et al., "Lymphomas in *Eμ-Pim1* Transgenic Mice Exposed to Pulsed 900 MHz Electromagnetic Fields," *Radiation Research*, 147, pp.631-640, May 1997

[back] 7. Dr. Ross Adey (Veterans Administration Hospital at Loma Linda University in 1996) found what appeared to be a protective effect in rats exposed to the type of radiation used in digital cellular phones. The rats were exposed to an SAR of 0.58-0.75 W/Kg 836 MHz pulsed radiation of the TDMA type two hours a day, four days a week for 23 months, with the signals turned on and off every 7.5 minutes, so total exposure was 4 hours a week. Interestingly this effect was not present when a non-digital, analog signal was used. Rats exposed developed cancer less often. This study shows that low power fields of the digital cellular frequency can influence cancer development. Whether they would protect or promote in our children is a question for further study.

Ross Adey of the Veterans Administration Hospital at Loma Linda University, CA presented the results of pulsed (digital cellular) radiation on June 13, 1996 at the 18th Annual Meeting of the Bioelectromagnetics Society in Victoria, Canada. He presented the findings of the analog cellular phone radiation effect at the June 1997 2nd World Congress for Electricity and Magnetism in Biology and Medicine in Bologna, Italy. Reviews can be found in *Microwave News* issues July/August, 1996 and March/April 1997.

In recognition of his more than three decades of "fundamental contributions to the emerging science of the biological effects of electromagnetic fields," the authors of the November 2004 Report of the European Union's REFLEX Project (*Risk Evaluation of Potential Environmental Hazards From Low Frequency Electromagnetic Field Exposure Using Sensitive in vitro Methods*) chose to include Dr. Adey's personal views on Electromagnetic Field Exposure research as the Foreword to that report. To view the entire report, see: http://www.itis.ethz.ch/downloads/REFLEX_Final%20Report_171104.pdf (http://www.itis.ethz.ch/downloads/REFLEX_Final%20Report_171104.pdf)

The following is taken from Dr. Adey's Foreword found on pages 1-3 of the REFLEX Report:

The Future of Fundamental Research in a Society Seeking Categorical Answers to Health Risks of New Technologies

In summary, we have become superstitious users of an ever-growing range of technologies, but we are now unable to escape the web that they have woven around us.

Media reporters in general are no better informed. Lacking either responsibility or accountability, they have created feeding frenzies from the tiniest snippets of information gleaned from scientific meetings or from their own inaccurate interpretation of published research. In consequence, the public has turned with pleading voices to government legislatures and bureaucracies for guidance . . .

We face the problem brought on by the blind leading the blind. Because of public pressure for rapid answers to very complex biological and physical issues, short-term research programs have been funded to answer specific questions about certain health risks.

In many countries, and particularly in the USA, the effects of such harassing and troublesome tactics on independent, careful fundamental research have been near tragic. Beguiled by health hazard research as the only source of funding, accomplished basic scientists have diverted from a completely new frontier in physical regulation of biological mechanisms at the atomic level. Not only have governments permitted corporate interests in the communications industry to fund this research, they have even permitted them to determine the research questions to be addressed and to select the institutions performing the research.

[back] 8. Dr. A. W. Guy reported an extensive investigation on rats chronically exposed from 2 up to 27 months of age to low-level pulsed microwaves at SARs up to 0.4 W/Kg. The exposed group was found to have a significantly higher incidence of primary cancers.

A. W. Guy, C. K. Chou, L. Kunz, L. Crowley, and J. Krupp, "Effects of Long-Term Low-Level Radiofrequency Radiation Exposure on Rats." Volume 9. Summary. Brooks Air Force Base, Texas, USAF School of Aerospace Medicine, USF-SAM-TR-85-11; 1985

[back] 9. Drs. Henry Lai and N. P. Singh of the University of Washington in Seattle have reported both single- and double-strand DNA breaks in the brains of rats exposed to radiofrequency electromagnetic radiation at an SAR of 1.2 W/Kg. DNA is the carrier of the genetic information in all living cells. Cumulated DNA strand breaks in brain cells can lead to cancer or neurodegenerative diseases.

H. Lai and N. P. Singh, "Single- and Double-Strand DNA Breaks in Rat Brain Cells After Acute Exposure to Radiofrequency Electromagnetic Radiation," *International Journal of Radiation Biology*, Vol 69, No. 4, 513-521, 1996

[back] 10. Dr. Stanislaw Szmigielski has studied many thousands of Polish soldiers. He has found that those exposed to radiofrequency and microwave radiation in the workplace had more than double the cancer rate of the unexposed servicemen analyzing data from 1971-1985. He has presented further data suggesting a dose-response relationship with soldiers exposed to 100-200 W/cm² suffering 1.69 times as many cancers as the unexposed, and those exposed to 600-1000 W/cm² suffering 4.63 times as many cancers. The level considered safe for the public according to FCC regulations is 1000 W/cm². Occupational exposure up to 5000 W/cm² is allowed.

S. Szmigielski, "Cancer Morbidity in Subjects Occupationally Exposed to High Frequency (Radiofrequency and Microwave) Electromagnetic Radiation," *The Science of the Total Environment* 180:9-17, 1996

[back] 11. Dr. Bruce Hocking found an association between increased childhood leukemia incidence and mortality in the proximity of television towers. The power density ranged from 0.2-8.0 W/cm² nearer and 0.02 W/cm² farther from the towers.

B. Hocking, I. R. Gordon, H. L. Grain, and G. E. Hatfield, "Cancer Incidence and Mortality and Proximity to TV Towers," *Medical Journal of Australia* 165: 601-605; 1996

[back] 12. Drs. Mann and Röschke investigated the influence of pulsed high-frequency RF/MW radiation of digital mobile radio telephones on sleep in healthy humans. They found a hypnotic effect with shortening of sleep onset latency and a REM (Rapid Eye Movement) suppressive effect with reduction of duration and percentage of REM sleep. "REM sleep plays a special physiological role for information processing in the brain, especially concerning consolidation of new experiences. Thus the effects observed possibly could be associated with alterations of memory and learning functions."

K. Mann and J. Röschke, "Effects of Pulsed High-Frequency Electromagnetic Fields on Human Sleep," *Neuropsychobiology* 33:41-47, 1996

[back] 13. Dr. Allen Frey has been researching RF/MW radiation for over 3 decades. Here is the abstract on a paper concerning headaches and cellular phone radiation. "There have been numerous recent reports of headaches occurring in association with the use of hand-held cellular telephones. Are these reported headaches real? Are they due to emissions from telephones? There is reason to believe that the answer is "yes" to both questions. There are several lines of evidence to support this conclusion. First, headaches as a consequence of exposure to low intensity microwaves were reported in the literature 30 years ago. These were observed during the course of microwave hearing research before there were cellular telephones. Second, the blood-brain barrier appears to be involved in headaches, and low intensity microwave energy exposure affects the barrier. Third, the dopamine-opiate systems of the brain appear to be involved in headaches, and low intensity electromagnetic energy exposure affects those systems. In all three lines of research, the microwave energy used was approximately the same—in frequencies, modulations, and incident energies—as those emitted by present day cellular telephones. Could the current reports of headaches be the canary in the coal mine, warning of biologically significant effects?"

A. H. Frey, "Headaches from Cellular Telephones: Are they Real and What Are the Implications?" *Environmental Health Perspectives* Volume 106, Number 3, pp.101-103, March 1998

[back] 14. Henry Lai's review of the literature concerning neurological effects of RF/MW radiation: Existing data indicate that RF/MW radiation of relatively low intensity can affect the nervous system. Changes in blood-brain barrier, morphology, electrophysiology, neurotransmitter functions, cellular metabolism, and calcium efflux, and genetic effects have been reported in the brain of animals after exposure to RF. These changes can lead to functional changes in the nervous system. Behavioral changes in animals after exposure to RF have been reported.

Even a temporary change in neural functions after RF/MW radiation exposure could lead to adverse consequences. For example, a transient loss of memory function or concentration could result in an accident when a person is driving. Loss of short term working memory has indeed been observed in rats after acute exposure to RF/MW radiation.

Research has also shown that the effects of RF/MW radiation on the nervous system can cumulate with repeated exposure. The important question is, after repeated exposure, will the nervous system adapt to the perturbation and when will homeostasis break down? Related to this is that various lines of evidence suggest that responses of the central nervous system to RF/MW radiation could be a stress response. Stress effects are well known to cumulate over time and involve first adaptation and then an eventual break down of homeostatic processes.

H. Lai, "Neurological Effects of Radiofrequency Electromagnetic Radiation Relating to Wireless Communication Technology," Paper presentation at the IBC-UK Conference: "Mobile Phones-Is There a Health Risk?" September 16-17, 1997, Brussels, Belgium

[back] 15. Blood-Brain-Barrier: The blood-brain-barrier (BBB) is primarily a continuous layer of cells lining the blood vessels of the brain. It is critical for regulation of the brain's activity. Lai notes that "Even though most studies indicate that changes in the BBB occurs only after exposure to RF/MW radiation of high intensities with significant increase in tissue temperature, several studies have reported increases in permeability after exposure to RF/MW radiation of relatively low intensities...Pulsed RF seems to be more potent than continuous wave RF." Pulsed RF/MW is the type used in digital cellular systems. Effects on the BBB were noted at the 0.2 W/cm² level, and even at SAR of 0.016-5 W/kg. These effects could lead to local changes in brain function.

H. Lai, Ibid

[back] 16. Cellular Morphology: RF/MW radiation induced morphological changes of the central nervous system cells and tissues have been shown to occur under relatively high intensity or prolonged exposure to the RF/MW radiation. However, there are several studies which show that repeated exposure at relatively low power intensities caused morphological changes in the central nervous system. Again here pulsed (as in digital phone use) RF/MW radiation produced more pronounced effects. Certain drugs given to nonhuman primates sensitized them, for instance allowing eye damage to occur at very low power intensities. Dr Lai notes "Changes in morphology, especially cell death, could have an important implication on health. Injury-induced cell proliferation has been hypothesized as a cause of cancer." Some of these experiments were in the range of SAR 0.53 W/kg or even 0.26 W/kg.

H. Lai, Ibid

[back] 17. Neural Electrophysiology: Changes in neuronal electrophysiology, evoked potentials, and EEG have been reported. Some effects were observed at low intensities and after repeated exposure, suggesting cumulative effect. Energy density levels were as low as 50 W/cm².

H. Lai, Ibid

[back] 18. Neurotransmitters: Neurotransmitters are molecules which transmit information from one nerve cell to another. Early studies have reported changes in various neurotransmitters (catecholamines, serotonin, and acetylcholine) in the brain of animals only after exposure to high intensities of RF/MW radiation. However, there are more recent studies that show changes in neurotransmitter functions after exposure to low intensities of RF radiation. For example, effects were seen at 50 μW/cm² in one experiment. U.S. and Canadian RF/MW radiation safety policies allow exposures of 1000 μW/cm² at that frequency.

RF/MW radiation activates endogenous opioids in the brain. Endogenous opioids are neurotransmitters with morphine-like properties and are involved in many important physiological and behavioral functions, such as pain perception and motivation.

The response to RF/MW radiation depends on the area of the brain studied and on the duration of exposure. Exposure to RF/MW radiation has been shown to affect the behavioral actions of benzodiazepines (these are drugs such as Valium).

H. Lai, Ibid

[back] 19. Metabolic Changes in Neural Tissue: Several studies investigated the effects of RF/MW radiation exposure on energy metabolism in the rat brain. Surprisingly, changes were reported after exposure to relatively low intensity RF/MW radiation for a short duration of time (minutes). The effects depended on the frequency and modulation characteristics of the RF/MW radiation and did not seem to be related to temperature changes in the tissue.

Calcium ions play important roles in the functions of the nervous system, such as the release of neurotransmitters and the actions of some neurotransmitter receptors. Thus changes in calcium ion concentration could lead to alterations in neural functions. This is an area of considerable controversy because some researchers have also reported no significant effects of RF/MW radiation exposure on calcium efflux. However, when positive effects were observed, they occurred after exposure to RF/MW radiation of relatively low intensities and were dependent on the modulation and intensity of the RF/MW radiation studied (window effects). Some studies had SARs as low as 0.05-0.005 W/kg.

H. Lai, Ibid

[back] 20. Cytogenetic effects have been reported in various types of cells after exposure to RF/MW radiation. Recently, several studies have reported cytogenetic changes in brain cells by RF/MW radiation, and these results could have important implication for the health effects of RF/MW radiation. Genetic damage to glial cells can result in carcinogenesis. However, since neurons do not undergo mitosis, a more likely consequence of neuronal genetic damage is changes in functions and cell death, which could either lead to or accelerate the development of neurodegenerative diseases. Power densities of 1 mW/cm² were employed, a level considered safe for the public by the FCC.

RF/MW radiation induced increases in single and double strand DNA breaks in rats can be blocked by treating the rats with melatonin or the spin-trap compound N-t-butyl-phenyltrone. Since both compounds are potent free radical scavengers, these data suggest that free radicals may play a role in the genetic effect of RF. If free radicals are involved in the RF-induced DNA strand breaks in brain cells, results from this study could have an important implication on the health effects of RF exposure. Involvement of free radicals in human diseases, such as cancer and atherosclerosis, has been suggested. Free radicals also play an important role in the aging process, which has been ascribed to be a consequence of accumulated oxidative damage to body tissues, and involvement of free radicals in neurodegenerative diseases, such as Alzheimer's, Huntington, and Parkinson, has also been suggested. One can also speculate that some individuals may be more susceptible to the effects of RF/MW radiation exposure.

H. Lai, Ibid

[back] 21. Dr. A. A. Kolodynski and V. V. Kolodynska of the Institute of Biology, Latvian Academy of Sciences, presented the results of experiments on school children living in the area of the Skrunda Radio Location Station in Latvia. Motor function, memory, and attention significantly differed between the exposed and control groups. The children living in front of the station had less developed memory and attention and their reaction time was slower.

A. A. Kolodynski, V. V. Kolodynska, "Motor and Psychological Functions of School Children Living in the Area of the Skrunda Radio Location Station in Latvia," The Science of the Total Environment 180:87-93, 1996

[back] 22. Dr. H. Lai and colleagues in 1993 exposed rats to 45 minutes of pulsed high frequency RF/MW radiation at low intensity and found that the rats showed retarded learning, indicating a deficit in spatial "working memory" function.

H. Lai, A. Horita, and A. W. Guy, "Microwave Irradiation Affects Radial-Arm Maze Performance in the Rat," Bioelectromagnetics 15:95-104, 1994

NOTE: Dr. Lai's January 2005 compilation of published RF/MW radiation studies demonstrating biological effects of exposure to low-intensity RF/MW radiation is included as a Reference section at the end of this report.

[back] 23. Dr. Stefan Braune reported a 5-10 mm Hg resting blood pressure rise during exposure to RF/MW radiation of the sort used by cellular phones in Europe. The Lancet, the British medical journal where the report appeared, stated that "Such an increase could have adverse effects on people with high blood pressure."

S. Braune, "Resting Blood Pressure Increase During Exposure to a Radio-Frequency Electromagnetic Field," The Lancet 351, pp. 1,857-1,858, 1998

[back] 24. Dr. Kues and colleagues (of Johns Hopkins University and the Food and Drug Administration) found that placing timolol and pilocarpine into the eyes of monkeys and then exposing them to low power density pulsed RF/MW radiation caused a significant reduction in the power-density threshold for causing damage to the cells covering the eye and the iris. In fact the power was reduced by a factor of 10, so that it entered the "acceptable, safe" level of the FCC, 1 mW/cm²! Timolol and pilocarpine are commonly used by people suffering from glaucoma. This is a very important study, as it points to the fact that laboratory experiments under "ideal" conditions are rarely what one finds in real life. The "safe" level of RF/MW radiation exposure for healthy people is likely to be very different than for those of us who suffer from illness, take medications, or are perhaps simply younger or older than those in the experiments.

H. A. Kues, J. C. Monahan, S. A. D'Anna, D. S. McLeod, G. A. Luttj, and S. Koslov, "Increased Sensitivity of the Non-Human Primate Eye to Microwave Radiation Following Ophthalmic Drug Pretreatment," *Bioelectromagnetics* 13:379-393, 1992

[back] 25. The World Health Organization states that "concerns have been raised about the safety of cellular mobile telephones, electric power lines and police speed-control 'radar guns.' Scientific reports have suggested that exposure to electromagnetic fields emitted from these devices could have adverse health effects, such as cancer, reduced fertility, memory loss, and adverse changes in the behaviour and development of children." Therefore, "In May 1996, in response to growing public health concerns in many Member States over possible health effects from exposure to an ever-increasing number and diversity of EMF sources, the World Health Organization launched an international project to assess health and environmental effects of exposure to electric and magnetic fields, which became known as the International EMF Project. The International EMF Project will last for five years." "A number of studies at [frequencies above about 1 MHz] suggest that exposure to RF fields too weak to cause heating may have adverse health consequences, including cancer and memory loss. Identifying and encouraging coordinated research into these open questions is one of the major objectives of the International EMF Project."

World Health Organization Fact Sheet N181, "Electromagnetic Fields and Public Health, The International EMF Project," reviewed May 1998 and World Health Organization Fact Sheet N182, "Electromagnetic Fields and Public Health, Physical Properties and Effects on Biological Systems," reviewed May 1998,

[back] 26. The U. S. Food and Drug Administration in a January 14, 1998 letter to the House Telecommunications Subcommittee stated it "believes additional research in the area of RF is needed." In 1997 the FDA established the following priorities:

- Chronic (lifetime) animal exposures should be given the highest priority.
- Chronic animal exposures should be performed both with and without the application of chemical initiating agents to investigate tumor promotion in addition to tumorigenesis.
- Identification of potential risks should include end points other than brain cancer (e.g. ocular effects of RF radiation exposure).
- Replication of prior studies demonstrating positive biological effects work is needed. A careful replication of the Chou and Guy study (*Bioelectromagnetics*, 13, pp.469-496, 1992) which suggests that chronic exposure of rats to microwaves is associated with an increase in tumors, would contribute a great deal to the risk identification process for wireless communication products.
- Genetic toxicology studies should focus on single cell gel studies of DNA strand breakage and on induction of micronuclei.
- Epidemiology studies focused on approaches optimized for hazard identification are warranted.

Food and Drug Administration Recommendations quoted in *Microwave News*, March/April, 1997

[back] 27. The International Agency for Research on Cancer (IARC) is planning a multi-country, multi-million dollar study of cancer among users of wireless phones, beginning 1998. *Microwave News*, January/February, 1998

[back] 28. The Swedish Work Environmental Fund initiated a new epidemiological study on cellular phone radiation and brain tumors in 1997. *Microwave News*, November/December, 1997

[back] 29. The National Cancer Institute announced plans for a 5 year study of brain tumors and RF/MW radiation in 1993. *Microwave News*, January/February, 1993

[back] 30. The European Commission (EC) Expert Group on health effects of wireless phones called for a 5 year research program with a \$20 million budget, reported 1997. *Microwave News*, January/February, 1997

[back] 31. A report commissioned by New Zealand's Ministry of Health stated that "It is imperative that the scientific issues be clarified as soon as possible, as there is much at stake." It called for more research to examine the potential health effects of RF radiation. *Microwave News*, November/December, 1996

[back] 32. The National Health and Medical Research Council of Australia announced its sponsorship of a 5 year, \$3.5 million project on potential health effects of mobile phone technology in 1996. *Microwave News*, November/December, 1996

[back] 33. The Commonwealth Scientific Industrial Research Organization (CSIRO) of Australia concluded in 1995 that the safety of cellular telephones cannot be resolved "in the near future." Dr. Stan Barnett, a principal researcher of CSIRO, states that "My goal is to establish a national committee to approach this problem by coordinating relevant and focused research." He estimated a budget of \$3 million over a 3 year period would be necessary.

Commonwealth Scientific Industrial Research Organization, "Status of Research on Biological Effects and Safety of Electromagnetic Radiation: Telecommunications Frequencies," a report prepared by Dr. Stan Barnett, as cited in *Microwave News*, September/October, 1995

[back] 34. In Canada, Expert Panels are formed in response to requests from governments and other organizations for guidance on public policy issues where specialized knowledge is required. The Royal Society of Canada (RSC) is the only national academic organization, encompassing all fields of study in the sciences, arts and humanities that provides, through its Committee on Expert Panels, a service to Canadians by convening Expert Panels that produce publicly disseminated, arms-length, third party reviews. The most recent Expert Panel report addressing RF/MW radiation examines new data on dosimetry and exposure assessment, thermoregulation, biological effects such as enzyme induction, and toxicological effects, including genotoxicity, carcinogenicity, and testicular and reproductive outcomes. Epidemiological studies of mobile phone users and occupationally exposed populations are examined, along with human and animal studies of neurological and behavioural effects. All of the authoritative reviews completed within the last two years have supported the need for further research to clarify the possible associations between RF fields and adverse health outcomes that have appeared in some reports. See: http://www.rsc.ca/index.php?lang_id=1&page_id=120 (http://www.rsc.ca/index.php?lang_id=1&page_id=120).

Recent Advances in Research on Radiofrequency Fields and Health: 2001-2003; A Follow-up to The Royal Society of Canada, Report on the Potential Health Risks of Radiofrequency Fields from Wireless Telecommunication Devices, 1999

[back] 35. The European Union effort to address this issue is in the study *Risk Evaluation of Potential Environmental Hazards from Low Energy Electromagnetic Field Exposure Using Sensitive in vitro Methods (REFLEX)*. Exposure to electromagnetic fields (EMF) in relation to health is a controversial topic throughout the industrial world.

So far epidemiological and animal studies have generated conflicting data and thus uncertainty regarding possible adverse health effects. This situation has triggered controversies in communities especially in Europe with its high density of population and industry and the omnipresence of EMF in infrastructures and consumer products. These controversies are affecting the siting of facilities, leading people to relocate, schools to close or power lines to be re-sited, all at great expense. The European Union believes that causality between EMF exposure and disease can never be regarded as proven without knowledge and understanding of the basic mechanisms possibly triggered by EMF. To search for those basic mechanisms powerful technologies developed in toxicology and molecular biology were to be employed in the REFLEX project to investigate cellular and sub-cellular responses of living cells exposed to EMF *in vitro*.

The REFLEX data have made a substantial addition to the data base relating to genotoxic and phenotypic effects of both ELF-EMF and RF-EMF on *in vitro* cellular systems. While the data neither precludes nor confirms a health risk due to EMF exposure nor was the project designed for this purpose, the value lies in providing new data that will enable mechanisms of EMF effects to be studied more effectively than in the past. Furthermore, the REFLEX data provide new information that will be used for risk evaluation by WHO, IARC and ICNIRP. For further information on REFLEX see: http://europa.eu.int/comm/research/quality-of-life/ka4/ka4_electromagnetic_en.html (http://europa.eu.int/comm/research/quality-of-life/ka4/ka4_electromagnetic_en.html)

[back] 36. The Swedish Radiation Protection Institute (SSI) endeavors to ensure that human beings and the environment are protected from the harmful effects of radiation, both in the present and in the future. SSI has focused on epidemiological research on cancer and exposure from mobile phones and transmitters as well as experimental cancer research. In addition three selected topics were also discussed, namely blood-brain barrier, heat shock proteins, and precautionary framework. For further information on SSI see: http://www.ssi.se/forfattning/eng_forfattlista.html (http://www.ssi.se/forfattning/eng_forfattlista.html)

[back] 37. In the United Kingdom, the National Radiological Protection Board (NRPB) was created by the Radiological Protection Act 1970. The statutory functions of NRPB are to advance the acquisition of knowledge about the protection of mankind from radiation hazards through research and to provide information and advice to persons (including Government Departments) with responsibilities in the United Kingdom in relation to the protection from radiation hazards either of the community as a whole or of particular sections of the community. The NRPB believes that there is a need for better occupational studies rather than simply for more. In particular, the studies need to be of occupational groups for whom measurements show that there is genuinely a substantially raised exposure to RF fields. If the studies are to be more informative than those so far, a key requirement will be for improved exposure measurement (or improved estimation of exposure) for individuals, or at least for occupational groups. It would be desirable, as far as practical, that the studies should measure the intensity and timing of RF field exposures, and also that they should include some assessment of major RF field exposures from sources other than the current occupation. Ideally, exposure assessment needs to be anatomical site (organ)-specific, because some sources result in greatly differing doses to different parts of the body. It is a difficulty in these prescriptions, of course, that the appropriate exposure metric is unknown. For further information on NRPB see: <http://www.nrpb.org/index.htm> (<http://www.nrpb.org/index.htm>)

[back] 38. On January 5, 2005, the EMF-Team Finland issued the Helsinki Appeal 2005 to members of the European Parliament. In it physicians and researchers call on the European Parliament to apply the Precautionary Principle to electromagnetic fields, especially in the radio- and microwave- frequency bands. They criticize the present RF/MW radiation safety standards that do not recognize the biological effects caused by non-thermal exposures to non-ionizing radiation [i.e., RF/MW radiation.] They also call for continued refunding of the REFLEX EMF research program. The text of the Helsinki Appeal 2005 is found at: <http://www.emrpolicy.org/news/headlines/index.htm> (<http://www.emrpolicy.org/news/headlines/index.htm>)

[back] 39. On July 19, 1993 Dr. Elizabeth Jacobson, Deputy Director for Science, Center for Devices and Radiological Health, Food and Drug Administration criticized Thomas Wheeler, President of the Cellular Telecommunications Industry Association:

"I am writing to let you know that we were concerned about two important aspects of your press conference of July 16 concerning the safety of cellular phones, and to ask that you carefully consider the following comments when you make future statements to the press. First, both the written press statements and your verbal comments during the conference seemed to display an unwarranted confidence that these products will be found absolutely safe. In fact, the unremittingly upbeat tone of the press packet strongly implies that there can be no hazard, leading the reader to wonder why any further research would be needed at all.....More specifically, your press packet selectively quotes from our Talk Paper of February 4 in order to imply that FDA believes that cellular phones are "safe." ("There is no proof at this point that cellular phones are harmful.") In fact, the same Talk Paper also states, "There is not enough evidence to know for sure, either way." Our position, as we have stated it before, is this: Although there is no direct evidence linking cellular phones with harmful effects in humans, a few animal studies suggest that such effects could exist. It is simply too soon to assume that cellular phones are perfectly safe, or that they are hazardous—either assumption would be premature. This is precisely why more research is needed."

Full text of letter can be found in *Microwave News, July/August, 1993*

[back] 40. In 1993 the Director of the Office of Radiation and Indoor Air of the Environmental Protection Agency suggested that the FCC not adopt the 1992 ANSI/IEEE standard "due to serious flaws," among them (1) "the ANSI/IEEE conclusion that there is no scientific data indicating that certain subgroups of the population are more at risk than others is not supported by NCRP and EPA reports" and (2) "the thesis that ANSI/IEEE recommendations are protective of all mechanisms of interaction is unwarranted because the adverse effects level in the 1992 ANSI/IEEE standard are based on a thermal effect."

Letter from Margo T. Oge, Director, Office of Radiation and Indoor Air to Thomas Stanley, Chief Engineer, Office of engineering and Technology, FCC, dated Nov 9, 1993

[back] 41. A brief sampling of the CSIRO report:

Problems in studies of human populations published to date include imprecise estimates of exposure. As a result, such epidemiological studies may underestimate any real risk. The likelihood of epidemiological studies providing useful information is questionable, particularly if the biological end point cannot be predicted. Its value in the short term (less than 10 years) must be negligible unless there was an enormous increase in the rate of cancer growth. Interestingly, the incidence of brain tumors in the EC countries has increased substantially in recent years.

RF safety cannot be assessed in the absence of reported serious effects when so little research has been aimed at the problem. It is somewhat surprising, and rather disappointing, to find that although the literature contains many hundreds of publications, there are very few areas of consensus....At low levels the absence of clear thresholds and [the] presence of intensity and frequency windows have created questions rather than provided answers.

There is no doubt that the interpretation of bioeffects data has been clouded by a preoccupation with thermally mediated processes. In fact, development of the ANSI/IEEE standard is based only on well-established thermal effects, and ignores the more subtle non-thermal processes that are more difficult to interpret and apply to human health.

Commonwealth Scientific Industrial Research Organization, "Status of Research on Biological Effects and Safety of Electromagnetic Radiation: Telecommunications Frequencies," a report prepared by Dr. Stan Barnett, as cited in *Microwave News, September/October, 1995*

[back] 42. Statement from the October 25-28, 1998 "Symposium of Mobile Phones and Health - Workshop on Possible Biological and Health Effects of RF Electromagnetic Fields" held at the University of Vienna, Austria.

The preferred terminology to be used in public communication: Instead of using the terms "athermal", "non-thermal" or "microthermal" effects, the term "low intensity biological effects" is more appropriate.

Preamble: The participants agreed that biological effects from low-intensity exposures are scientifically established. However, the current state of scientific consensus is inadequate to derive reliable exposure standards. The existing evidence demands an increase in the research efforts on the possible health impact and on an adequate exposure and dose assessment.

Base stations: How could satisfactory Public Participation be ensured: The public should be given timely participation in the process. This should include information on technical and exposure data as well as information on the status of the health debate. Public participation in the decision (limits, siting, etc.) should be enabled.

Cellular phones: How could the situation of the users be improved: Technical data should be made available to the users to allow comparison with respect to EMF-exposure. In order to promote prudent usage, sufficient information on the health debate should be provided. This procedure should offer opportunities for the users to manage reduction in EMF-exposure. In addition, this process could stimulate further developments of low-intensity emission devices.

[back] 43. Statement from the June 7-8, 2000 International Conference on Cell Tower Siting Linking Science and Public Health, Salzburg, Austria. The full report can be found at: www.land-sbg.gv.at/celltower (<http://www.land-sbg.gv.at/celltower>)

- It is recommended that development rights for the erection and for operation of a base station should be subject to a permission procedure. The protocol should include the following aspects:
 - o Information ahead and active involvement of the local public
 - o Inspection of alternative locations for the siting
 - o Protection of health and wellbeing
 - o Considerations on conservation of land- and townscape
 - o Computation and measurement of exposure
 - o Considerations on existing sources of HF-EMF exposure
 - o Inspection and monitoring after installation
- It is recommended that a national database be set up on a governmental level giving details of all base stations and their emissions.
- It is recommended for existing and new base stations to exploit all technical possibilities to ensure exposure is as low as achievable (ALATA-principle) and that new base stations are planned to guarantee that the exposure at places where people spend longer periods of time is as low as possible, but within the strict public health guidelines.
- Presently the assessment of biological effects of exposures from base stations in the low-dose range is difficult but indispensable for protection of public health. There is at present evidence of no threshold for adverse health effects.
 - o Recommendations of specific exposure limits are prone to considerable uncertainties and should be considered preliminary. For the total of all high frequency irradiation a limit value of 100 mW/m² (10 µW/cm²) is recommended.
 - o For preventive public health protection a preliminary guideline level for the sum total of exposures from all ELF pulse modulated high-frequency facilities such as GSM base stations of 1 mW/m² (0.1 µW/cm²) is recommended.

[back] 44. Scientists attending the September 13-14, 2002 International Conference "State of the Research on Electromagnetic Fields – Scientific and Legal Issues," organized by ISPESL (National Institute for Prevention and Work Safety, Italy), the University of Vienna, and the City of Catania, held in Catania, Italy, agreed to the following:

- Epidemiological and *in vivo* and *in vitro* experimental evidence demonstrates the existence for electromagnetic field (EMF) induced effects, some of which can be adverse to health.
- We take exception to arguments suggesting that weak (low intensity) EMF cannot interact with tissue.
- There are plausible mechanistic explanations for EMF-induced effects which occur below present ICNIRP and IEEE guidelines and exposure recommendations by the EU.
- The weight of evidence calls for preventive strategies based on the precautionary principle. At times the precautionary principle may involve prudent avoidance and prudent use.
- We are aware that there are gaps in knowledge on biological and physical effects, and health risks related to EMF, which require additional independent research.

[back] 45. The Freiburger Appeal is a German based appeal by mainly medical practitioners who are concerned about the effects, they believe, from mobile phone technology including masts that are appearing in their patients. It started in Oct 2002 and with very little international publicity has got 50,000 signatories with at least 2000 medical signatures from across the world. Mast These physicians and scientists agreed to establish an international scientific commission to promote research for the protection of public health from EMF and to develop the scientific basis and strategies for assessment, prevention, management and communication of risk, based on the precautionary principle.

Excerpt:

On the basis of our daily experiences, we hold the current mobile communications technology (introduced in 1992 and since then globally extensive) and cordless digital telephones (DECT standard) to be among the fundamental triggers for this fatal development. One can no longer evade these pulsed microwaves. They heighten the risk of already-present chemical/physical influences, stress the body-immune system, and can bring the body-still-functioning regulatory mechanisms to a halt. Pregnant women, children, adolescents, elderly and sick people are especially at risk.

Statement of the physicians and researchers of Interdisziplinäre Gesellschaft für Umweltmedizin e. V. (Interdisciplinary Association for Environmental Medicine) IGUMED, Sackingen, Germany, September 19, 2002. The Freiburger Appeal can be found at: <http://www.mastsanity.org/doctors-appeals.html> (<http://www.mastsanity.org/doctors-appeals.html>).

[back] 46. Report of the European Union's REFLEX Project (Risk Evaluation of Potential Environmental Hazards from Low Frequency Electromagnetic Field Exposure Using Sensitive *in vitro* Methods), November 2004. The Project studied ELF and RF exposures to various animal cell types. The report is found at: http://www.itis.ethz.ch/downloads/REFLEX_Final%20Report_171104.pdf (http://www.itis.ethz.ch/downloads/REFLEX_Final%20Report_171104.pdf)

From the Summary: *[t]he omnipresence of EMF's in infrastructures and consumer products have become a topic of public concern. This is due to the fear of people that based on the many conflicting research data a risk to their health cannot be excluded with some certainty. Therefore, the overall objective of REFLEX was to find out whether or not the fundamental biological processes at the cellular and molecular level support such an assumption. For this purpose, possible effects of EMF's on cellular events controlling key functions, including those involved in carcinogenesis and in the pathogenesis of neurodegenerative disorders, were studied through focused research. Failure to observe the occurrence of such key critical events in living cells after EMF exposure would have suggested that further research efforts in this field could be suspended and financial resources be reallocated to the investigation of more important issues. But as clearly demonstrated, the results of the REFLEX project show the way into the opposite direction.*

[back] 47. From the Discussion section of the December 20, 2004 Second Annual Report of Sweden's Radiation Protection Board (SSI) entitled: *Recent Research on Mobile Telephony and Health Risks: Second Annual Report from SSI's Independent Expert Group on Electromagnetic Fields*. The complete report is available at: http://www.ssi.se/english/EMF_exp_Eng_2004.pdf (http://www.ssi.se/english/EMF_exp_Eng_2004.pdf)

To date, little is known about the levels of radiofrequency radiation exposure in the general population from sources such as mobile phones being used by oneself or other people, mobile phone base stations, and radio and television transmitters. Measurements that have been performed have usually been made as a result of public concern about base station exposures or other specific sources, and have therefore been made at locations that could be assumed to have higher fields than would be the case if measurement locations were selected randomly. Furthermore, all measurements have been stationary, and there is today no knowledge about the level of exposure that an individual will have throughout the day.

There is need for information about the personal exposure to RF fields in the general population, to enhance the understanding of the relative importance of exposure from base stations close to the home, from radio and television transmitters, and from the use of mobile phones . . . Studies with personal RF exposure measurements of randomly selected samples of the general population are strongly encouraged.

[back] 48. Released January 11, 2005, Mobile Phones and Health 2004: Report by the Board of NRPB Documents of the NRPB: Volume 15, No. 5. See: http://www.nrpb.org/publications/documents_of_nrpb/abstracts/absd15-5.htm (http://www.nrpb.org/publications/documents_of_nrpb/abstracts/absd15-5.htm)

From the Executive Summary:

The Board notes that a central recommendation in the Stewart Report was that a precautionary approach to the use of mobile phone technologies be adopted until much more detailed and scientifically robust information on any health effects becomes available.

The Board considers that it is important to understand the signal characteristics and field strengths arising from new telecommunications systems and related technologies, to assess the RF exposure of people, and to understand the potential biological effects on the human body.

[back] 49. The ICNIRP exposure guidelines are only designed to protect against "known adverse health impacts," according to Dr. Jürgen Bernhardt, ICNIRP's chairman. Bernhardt reviewed the updated limits, which cover the spectrum from 1 Hz to 300 GHz, in a presentation at the 20th Annual Meeting of the Bioelectromagnetics Society in St. Pete Beach, FL, on June 10. The limits protect against "short-term, immediate health effects" such as nerve stimulation, contact shocks and thermal insults, according to the guidelines, which appear in the April issue of *Health Physics* (74, pp.494-522, 1998). Despite "suggestive" evidence that power frequency magnetic fields can be carcinogenic, ICNIRP has concluded that this and other non-thermal health effects have not been "established." ICNIRP has long followed this approach to standard-setting. In his talk, Bernhardt noted that the guidelines include "no consideration regarding prudent avoidance" for health effects for which evidence is less than conclusive.

Microwave News, July/August 1998

Additional References and Studies

The following references reporting biological effects of radiofrequency radiation (RFR) at low intensities through January 2005 were compiled on 12/27/04 by Henry C. Lai PhD, Research Professor of Bioengineering, University of Washington, Seattle, WA

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de Pomerai et al. (*FEBS Lett* 22:543(1-3):93-97, 2003 - RFR damages proteins at 0.015-0.020 W/kg.

D'Inzeo et al. *Bioelectromagnetics* 9(4):363-372, 1988 - very low intensity RFR (0.002 - 0.004 mW/cm²) affects the operation of acetylcholine-related ion-channels in cells. These channels play important roles in physiological and behavioral functions.

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The International Association of Fire Fighters recognizes IAFF Local 3368, Carpinteria-Summerland, California, who brought this issue to the attention of our membership through the Resolution 15, submitted through our biennial convention in August 2004. Additionally, the following local affiliates provided support for the passage of the resolution: Brookline, Massachusetts, San Diego, California, San Francisco, California and Vancouver, British Columbia. We also acknowledge the efforts of Dr. Henry C. Lai,

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RMD; 3/2005

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Center of Excellence (<http://www.iaffrecoverycenter.com/>)

FIREPAC (<http://client.prod.iaff.org/#contentid=595>)

How to Become a Fire Fighter (<http://www.iaff.org/et/becomefirefighter/index.html>)

Fire Ops 101 (<http://client.prod.iaff.org/#page=fireops101>)

Fire Ground Survival (<http://client.prod.iaff.org/#menuid=31>)

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FEARLESS PARENT™

Thinking ... For a Change

Cell Tower Hypocrisy: Rescuing Firefighters Not Kids

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Cell Tower
Hypocrisy:
Rescuing
Firefighters
Not Kids

Fearless Parent

by Susan Foster

*Editor's note: California is **once again** in a trendsetting legislative battle with dramatic implications for our collective public health. Big Telecom wants fewer impediments to deliver next generation connectivity: more, faster, e-ver-y-where. It's time to say: NO. The technology we love is harming us and, most of all, our precious children who **absorb ten times more radiation than adults**, with their thinner skulls and higher water- and ion-content brains. Please share this post widely.*

Dear Gov. Jerry Brown,

I have a story to share with you. It involves inside information from the telecommunications industry; firefighters and what their brains look like following a five-year exposure to a cell tower outside their station; and a bill currently flying through the California Senate and Assembly.

SB 649 is going to land on your desk sometime in early September.

Veto this bill

As you know, many of us don't like SB 649. More than half the cities in California comprising more than 2/3 of California's citizens don't want this bill to become law.

SB 649 would essentially deregulate the telecommunications industry by giving them the right to force cities and counties to lease available lampposts, buildings, and the right-of-way for cell towers and transmitting antenna which will blanket our neighborhoods and our cities with 5G millimeter waves. 5G, or 5th generation wireless, is virtually untested on human beings. Electrical equipment the size of refrigerators will be allowed, along with back-up generators filled with diesel fuel.

Our exposure to radiation from towers has increased exponentially. With SB 649, California is about to add 50,000 more "small cells" to approximately 300,000 cell towers currently in existence nationwide.

The digital divide will remain a chasm

One of the selling points in legislatures across the country is that 5G will help close the digital divide. That sounds great.

The truth, however, is communications providers have repeatedly demonstrated that they will not make advanced services available to low-income or rural areas unless they are required to do so. SB 649 contains no such requirement.

Driverless cars over children

Most of all, we're worried about the most vulnerable among us – our children. In the name of faster downloads, appliances that communicate with smartphones in the Internet of Things (IoT), and driverless cars, what good is all this progress if you are putting our children with their developing brains and rapidly dividing cells at risk?

We don't want to sacrifice our children's health just so we can preheat the oven with the touch of our phones allowing us to pop a chicken in to roast the minute we walk in the door after a quick trip to the store in a car that just drove itself.

Wireless radiation and DDT have in common

SB 649 would increase harmful radiation that the World Health Organization's cancer committee IARC classified a **2b "possible human" carcinogen** in May 2011.

This verdict put everything on the RF – EMF spectrum into the same category as DDT, which has been banned in the U.S. since 1972. The vote on wireless radiation wasn't even close. It was 29 to 1.

The only thing that kept this radiation from being classified as a 2a "probable human" carcinogen was a lack of unbiased animal studies.

Reasons why the NTP study is such a big deal

Well, Gov. Brown, now we have one. And for a country with a paucity of government research on RF radiation since Ronald Reagan **defunded the EPA's research** around the same time the cell phone industry was taking in the early 1980s, the U.S. really came through big time with a rat study from NIH's National Toxicology Program (NTP).

The **\$25 million NTP study** found brain cancer and heart cancer when rats were exposed to full body cell phone radiation, not unlike the 24/7 exposure our children will be receiving if you sign SB 649 into law.

DNA damage from wireless radiation

And speaking of children, we have a profound desire not only for them to be healthy, but for their children to be healthy, as well. According to Microwave News, there was evidence of **DNA damage** coming out of the NTP study.

Please keep that, and the protection of our children in mind, when SB 649 hits your desk.

The firefighter exemption tells the tale

In a move that strikes me as a lesson for all of us to absorb, one group of Californians is already protected from SB 649. One's mind leaps immediately to the unborn, to children, to the elderly, to those who are infirm or disabled.

It is none of these groups.

The legislature has granted an exemption after a 17 year fight for recognition that cell towers were causing them harm, and that group is among the strongest, healthiest among us – the firefighters.

Why? Because they deserve it.

How do I know? Here's where the story I promised you comes in.

Telecom insider emerges from the shadows

Almost 20 years ago, I was walking our family dog after watching the school bus disappear from sight. From behind a small cluster of palm trees a woman stepped out of the shadows. She asked if we could speak, but insisted on doing so out of sight of passersby. She confirmed who I was, and asked if she had her information correct that I was a medical writer. I said I was, and suddenly the vaguely familiar face had more meaning.

She was the young wife of a telecom executive who lived several streets over. Our children went to the same school. I was then asked by the stranger if I could lead the neighborhood fight against a proposed cell tower being permitted for the golf course surrounding our neighborhood.

I responded with a question that seems almost inconceivable today. "What's a cell tower?" I was clueless. I'm embarrassed to say I didn't even question how voice data traveled from one cell phone to another.

The executive's wife told me she would point out a few faux metal palm trees to me, yet cautioned once I started recognizing these tall metal conduits for radiation from one point to another, I would never stop seeing them. Data was carried on the back of microwaves, she explained, and they could penetrate every living thing – plant, animal, and human.

I asked if she had any science to support this. "Yes," was her one syllable response. How do I get my hands on the studies, I wanted to know. She reassured me it would be taken care of, and then asked me to tell no one we had talked. Her husband's job was at risk.

As I was about to continue on a walk that was already in the process of changing my life, I turned back and asked an uncommonly bold question for me, "Am I correct that you were

diagnosed with cancer several years ago?" Yes, she had been. My next question was answered even before I asked.

“It’s the children I’m most worried about”

“Some of my husband’s colleagues have had brain cancer. It feels beyond coincidence. They all know at some level it’s dangerous, but they’re making so much money.” She paused, “It’s the children I’m most worried about.” I nodded in agreement about the children. More information was shared before I followed my dog out of the shadows. I struggled to assimilate what I had just heard. The industry knew this stuff caused cancer and they were still permitting cell towers for neighborhoods?

A numbness overcame me the rest of my walk through the neighborhood. The telecom executive’s wife had left me with a daunting challenge. I had to lead a neighborhood fight against a cell tower, yet we had to kill this permit without bringing up health before a city or county council.

Bureaucratic capture of the FCC ties our hands

The Telecom Act of 1996 forbade localities from opposing cell towers on health grounds, only aesthetics. In America?

Seriously? Yes, seriously.

It’s called the preemption clause. As long as the FCC says it’s okay – and that means under 1000 uW/cm² of radiation for a cell tower – it is presumed safe. Yet the FCC wasn’t a health agency and they didn’t do their own studies. It seems there was a **revolving door** between the FCC and the CTIA – The Wireless Lobby, leaving me with no reassurance of safety at all.

I was swimming in a sea of new information that I wished I didn’t know, yet the parent in me longed to know more. My wish was about to come true.

Secret agent in the night, with the science

For the next six weeks, perhaps two mornings a week, I would open the front door to let our dog outside before waking the children. There, placed squarely on the doormat, would be an unmarked manila envelope with two or three scientific studies inside.

This was my first glimpse into what the telecom industry knew in 2001, and has failed to this day to share with the public. A 1994 study by Henry Lai and N.P. Singh of the University of Washington struck me as the most worrisome.

RF radiation could damage DNA in the brain cells of rats.

We beat back the neighborhood cell tower

After an intense six week campaign, we prevailed with the help of a former union official who coached us in planning a march along a boulevard leading to the golf club at the back of the neighborhood. It was strategically timed for the weekend of the former San Diego Chargers' quarterback Stan Humphrey's celebrity golf tournament.

We created bad PR for the golf club willing to lease land to telecom, and bad PR for the wireless carrier.

The permit was pulled the day before our march.

Firefighters wanted help, too

Following our success, we were interviewed on TV. A few weeks later, I received a telephone call from a firefighter who had seen me speaking for the neighborhood group. He said their fire station in San Diego was getting hit with 24 antennae on the roof of the station. They were out of money and out of time.

Could I write an appeal?

I said I would try, but explained we couldn't do so based on health concerns. The firefighters were stunned. These guys risk their lives for us every day of the week and they did not have a right to say they didn't want 24 antennae on the roof of their fire station because the radiation was a health risk?

How could this be?

Telecom Act of 1996 preempts our rights

Check out Section 332(c)(7)(B)(iv) of The Telecommunications Act of 1996. It preempts zoning authority from local governments. Aside from aesthetics, a city has no voice.

I wrote the firefighters' appeal using a safety angle. It bought us time. One cell carrier went elsewhere.

We then worked to educate the fire chief about the dangers of wireless radiation. Fire chiefs often rent out space on the stations. By bringing in more revenue for the city, a chief's job is more secure. But the rank and file pay the price.

It comes down to the age old issue of money.

Canaries in the coal mine... with red fire hats

I began hearing more stories of firefighters who literally could not function in their jobs, as guardians of society. Once cell towers were activated on or adjacent to their stations, many – depending on the location of the tower and the direction the beam of radiation was following — developed severe headaches, insomnia, and foggy thinking.

These are not symptoms we wish to see in our First Responders.

Exposing the truth is what parents do

And so, as parents who care passionately about our children's futures know to do, I decided to take matters into my own hands. If my own government didn't care enough to fund studies into the hazards of RF radiation, and if the telecom industry was allowed to get away with **threatening universities and funding** where good science was taking place, we had to find other ways of exposing the truth.

In 2004, I organized a **SPECT brain scan pilot study of firefighters** who had been exposed to a cell tower on their station for over five years. We found brain abnormalities in all firefighters tested.

Res. 15 banned cell towers on fire stations

In 2004, I co-authored **Resolution 15**, which was passed overwhelmingly by the International Association of Firefighters. Res. 15 urging a moratorium on the placement of cell towers on fire stations in the US and Canada based not only on the SPECT scan study of California firefighters, but on **existing science**.

I then helped the Los Angeles **IAFF** locals as they aligned with law enforcement unions to **fight FirstNET towers** on their stations.

There is a solid history of firefighters becoming ill in close proximity to cell towers. There are human and financial costs associated and the state needs to hear their story, Gov. Brown.

The whole country needs to hear their story.

Supermen's kryptonite: brain damage, infertility

The symptoms experienced by the firefighters who participated in the SPECT brain scan study were similar to firefighters in other stations who live in the shadow of cell towers.

It is important to note that all the men we studied had passed rigorous physical and cognitive exams prior to being hired by the fire department. In California you have to score in the top 98th or 99th percentile to even be hired by the fire service. These were extremely bright, healthy men. For testing purposes we excluded men who had worked HazMat, as we did not want chemical exposure clouding the picture.

The firefighters' symptoms after a five-year exposure to a cell tower adjacent to their station included:

- headaches
- extreme fatigue
- cognitive impairment
- anesthesia-like sleep where the men woke up for 911 calls "as if they were drugged"
- inability to sleep
- depression
- anxiety
- unexplained anger
- infertility
- immune-suppression manifest in frequent colds and flu-like symptoms

Shocking stories of cognitive and other damage

Here is how these symptoms translated to real-life responses when we, as a society, need our firefighters the most:

- On several occasions firefighters got lost on 911 calls in the town they grew up in. They used to ride their bikes down these streets. Yet they got lost driving a fire engine.

- In another instance, the emergency bell sounded, and four firefighters awakened from what can only be described as a severe stupor. They got dressed in their protective gear as quickly as they could, slid down the pole, climbed in the truck – two in front and two in back – and just sat in the rig with the alarm sounding in the background. Finally the captain turned to the engineer who was holding the keys in his hand and said, “Hey, aren’t we supposed to be doing something?”
- A medic with 20 years of experience who had never made a mistake and prided himself on that fact forgot basic CPR in the midst of resuscitating a coronary victim. Because the men knew they were struggling to function in the face of the classic radiation poisoning, they looked out for each other. The captain had been counting chest compressions and took over, but it was a potential risk to the victim and a shattering personal experience for the medic.
- This is a relatively small fire department, but most of the men were at an age where they were starting families or adding to them. Yet for three years there were no live births among their wives. There appeared to be an inability to conceive, and there were several miscarriages. Three years after the tower was installed, a healthy son was born to one firefighter and his wife. At age two he was diagnosed with autism.

The brain scans of these six men revealed a pervasive, hyper-excitability of the neurons, which suggested the exposure to RF (microwave) radiation was causing the neurons to continually fire without benefit of rest. When neurons (brain cells) cannot rest, they ultimately die.

Yet more immediately, we found cognitive impairment, delayed reaction time, and lack of impulse control in all six men tested.

Holy smokes!

Gov. Brown, if we found this degree of damage in big, strong, previously healthy firefighters, just imagine what SPECT brain scans might reveal in children with thinner skulls, developing brains, and rapidly dividing cells.

FCC guidelines permit even more radiation

The fire station cell tower measured at 1 to 2/1000th of the allowable FCC limit of non-ionizing radiation. That means the towers could be almost 1000 times more powerful than

the level the firefighters were exposed to, and still be considered within FCC guidelines. And yet even at these “low” levels of radiation, we found brain abnormalities and measureable neurological deficits.

If your children or other family members become ill as a result of a 5G transmitting antenna on a lamppost outside your child’s bedroom window, the carrier is protected from a lawsuit.

Even more terrifying?

The cell tower that radiated the firefighters was 2G, or 2nd generation technology. With SB 649 we’re talking 5G with its untested millimeter wave used in airport body scanners and the military.

Lesson learned from six brave men

The firefighters’ most important lesson to us as a state, and as a society, may be that if we allow the buildout of cell towers so they become commonplace in front of homes and schools, just as they are now on fire stations, we will be facing not just a growing risk of cancer for ourselves and our children, but a neurological tsunami of illnesses from ADHD to autism to Alzheimer’s.

Do I have statistics to back up the theory that the firefighters whose stations have long been targeted for cell tower placement are harbingers of what is happening to society?

Yes, I do.

Rising ADHD, autism, Alzheimer’s, anxiety

More than one in ten children received an ADHD diagnosis in 2011 according to the CDC, and that represents a 42 percent rise from a decade earlier. Most of the costs were incurred by adults due to productivity and income losses and they’re staggering. CHADD, the National Resource on ADHD, evaluated the costs based on a review of 19 research studies and found for children and adults a range between \$143 billion to \$266 billion (adjusted to 2010 U.S. dollars).

The Autism Society puts the prevalence of autism in U.S. children as having increased by 119.4 percent from 2000 (1 in 150) to 2010 (1 in 68), extrapolating from CDC stats.

Autism services cost U.S. citizens \$236 – \$262 billion annually.

The rate of **people dying from Alzheimer's disease in the United States** rose by 55% over a 15-year period according to new data from the Centers for Disease Control (May 2017).

According to the Alzheimer's Organization, Alzheimer's is the most expensive disease in America, costing more than cancer and heart disease. In 2017, the **direct costs to American society of caring for those with Alzheimer's** and other dementias will total an estimated \$259 billion. The Alzheimer's costs to Medicare and Medicaid alone, for the same year, are staggering; together they will spend an estimated \$175 billion caring for those with Alzheimer's and other dementias – 68 percent of total costs.

If that didn't make you anxious enough...

The National Institute of Mental Health reported 25% of kids between ages 13 and 18 will experience an anxiety disorder. This is a **20-fold increase fold** over the last 30 years.

ADHD, autism, Alzheimer's, anxiety. And this is just the A's.

Radioactive isotopes and technicolor brains

Six firefighters had radioactive isotopes injected into their bloodstreams that lit their brains up in diagnostically-meaningful colors. Gov. Brown, you might ask what this has to do with these statistics and numbers? I suggest they may have a lot to do with explaining how the incidence rates of these neurological diseases and disorders got so inexplicably high.

These bold, fearless firefighters may not be your typical canaries in the coal mine, but we brought the coal mine to these grand men and women of the fire service. Many of them are ill, and we need to see them as possible harbingers of what is to come to the rest of us.

Explosion of wireless a causal factor?

Independent research has shown a host of adverse neurological and immunological effects from **cell towers**.

Is there a correlation of increases in ADHD, autism and Alzheimer's with an increase in the number of cell towers? The increase in mobile phone subscribers gives a better sense of the trend. There were just over 44,000,000 wireless subscriber connections in 1996. By 2016, 20 years later, there were 395,881,497 **subscriber connections according to the CTIA**.

Our exposure to radiation from towers has increased exponentially. With SB 649, California is about to add 50,000 more “small cells” to approximately 300,000 cell towers currently in existence nationwide.

An exemption for firefighters but not for kids?

The state clearly honors the sacrifice of California’s firefighters and is concerned about the health risks they face from cell towers. After all, it granted them an exemption from SB 649.

Yet, firefighters are the strongest of the strong. What does that imply for the rest of us?

Gov. Brown, shouldn’t we weigh the risk to our children of untested 5G before deployment of cell towers in front of homes, schools, parks, playgrounds such that our children are bathed in millimeter waves 24/7?

When did wireless become oxygen? There’s nothing we cannot do wired that we’re presently doing utilizing wireless technologies except talk on a cell phone. Let’s consider the risk in that context.

Leading the world, not just California

Your voice was heard around the world in July when crowds cheered in Hamburg, Germany as you announced California would gather leaders from around the world for a global warming summit next year. The *New York Times* called you America’s **de facto leader on climate change**.

You will have the power to march in lockstep with half the other states in this country attempting to fast track 5G infrastructure. Or you can tell California – and everyone listening – that we will pause, test, and protect first.

Veto the bill + a moratorium on 5G and IoT

We are asking you to be that leader now, and study the **5G millimeter wave** that has the ability to heat skin, eyes, and testes. 5G will be a ubiquitous presence in our lives and in our homes, 24/7, with no “off” switch, no reprieve, and it has never been studied on a human population. Consider all the phones, WiFi, tablets, and a disquieting number of cell towers already in existence.

We do not want a telecom usurpation of local control over our communities, and a blanket of radiation over our homes and our children.

Gov. Brown, put your pen down (please)

Before you sign, we beseech you to pause, bring in independent experts from all over the world, and make California a leader in children's health over the Internet of Things. Study the effects. Do not let our children become guinea pigs any more than they already are. Please put your pen down, Gov. Brown.

You've got mail

I'm asking every concerned parent to mail, email, or fax this letter to you and just say NO to SB 649 and 5G everywhere:

Governor Jerry Brown
c/o State Capitol, Suite 1173
Sacramento, CA 95814

Fax: (916) 558-3160

Email link (or manually enter: <https://govapps.gov.ca.gov/gov39mail/>)

**Respectfully yours,
Susan Foster**

ps. For more information about radiation risks, check out some great FP posts [here](#) and [here](#).



Susan Foster is a medical writer who has worked with firefighters on health, safety and policy with respect to cell towers on their stations since 2000. She organized a brain study of California firefighters in 2004 and was the original author of Resolution 15 passed by the IAFF in 2004. She is an Honorary Firefighter with the San Diego Fire Department and a U.S. Adviser to the UK's Radiation Research Trust.

📅 August 27, 2017

📄 [Avoiding Toxins](#), [Evidence-based Care](#), [Health & Wellness](#), [Health Revolution](#), [Healthy Children](#), [Parenting Dilemmas](#), [Personal Rights](#)
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https://feedpress.com/feedpress.com/

34 Comments



Eric Windheim BBEC, EMRS
August 28, 2017 at 1:11 pm

Reply

This is a truly astounding article: thank you Susan Foster!

Of course we should immediately call our State Assembly Member and demand they Vote No on SB 649 and call Governor Brown urging him not so sign it.

If this SB 649 madness is allowed, this article will be a testament to and indictment of our State legislators and Governor Brown who are ignorant of the 1,000s of peer reviewed scientific research documenting pain, suffering, injury and higher mortality directly related to proximity to and duration of exposure to a Cell Tower Antenna.

Sadly, Political Science seems to trump all other sciences.



Susan Foster
September 2, 2017 at 3:23 am

Reply

Hot off the press. Today (9/1) the Assembly Appropriations Committee passed SB 649 on to the full Assembly where it will be voted on Sept 5th or 6th. It will be essential to keep up the pressure and call your Assembly member and ask him/her to vote no on SB 649. Use this link to find your rep: <http://findyourrep.legislature.ca.gov/>



Ellie Marks
August 28, 2017 at 2:21 pm

Reply

Fabulous article- so helpful in the battle against this horrific SB 649. Thank you!!!!



Elena Mercuri
August 28, 2017 at 11:06 pm

Reply

Thank you Susan for all your efforts. I am a grandmother now and I started to warn and protect my family who is too busy, like most of our society, to stop and research. I have written to my Mayor, senators and a local newspaper as well as a women's organization and have gotten no answer yet and I feel I won't. This 5G technology scared me more than vaccination which was my first fear. I hope

our governor leaves a good legacy and takes the right actions or will have to carry the consequences for ever.



Susan Foster

September 2, 2017 at 11:03 pm

Reply

Like you, I hope for a legacy of health from Gov. Brown, Elena. So good of you to be a Fearless Grandparent and do the research for your family!



Sharon Noble

August 29, 2017 at 1:51 am

Reply

A wonderful appeal to Gov. Brown who hopefully will use all of this information to make the right decision. He could lead the way by setting a precedent for all of North America where microcells are being installed mere feet from bedrooms where children sleep. These microcells hold multiple transmitters and likely very soon at least one will be emitting 5G frequencies.

Thank you so much, Susan, for this important letter.



Eileen O'Connor

August 29, 2017 at 8:25 am

Reply

Such an important and informative article. We owe Susan Foster a debt of gratitude for her tireless work and determination to create awareness with regards to the risks for the public especially our children following exposure to microwave radiation. I totally agree It's time to say: NO. This is a global issue and one that cannot be ignored. It's time for world to listen and take action before it's too late.

Eileen O'Connor

Director

EM Radiation Research Trust

<http://www.radiationresearch.org>

Trustee

PHIRE

<http://phiremedical.org>

Board Member

International EMF Alliance

<http://www.iemfa.org>

Sent from a hardwired computer

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Susan Foster

September 2, 2017 at 3:32 am

Reply

Thank you, Eileen O'Connor! We could use a heavy dose of your brilliant UK activism over here. Please be aware 5G is planned for roll out in the UK and throughout Europe. I wish we had started this level of activism in California and across the country two years earlier. These bills are often pushed through in the summer months when people are on vacation and less able to mobilize. If any country can turn back 5G it will be yours ... as long as you're part of the effort!



Holly Manion

August 29, 2017 at 12:06 pm

Reply

This is a wake-up call for the world. If this brain damage occurred to big strong firefighters than what about the damage that is occurring to our vulnerable young children not just from cell towers but from WIFI in the schools. Every parent reading this should send this article to their school boards and demand we go back to wired computers, turn cell phones off during school hours, and get cell towers OFF of school property. I am writing to Gov. Brown right now, and I hope everyone else does too!

We absolutely need a moratorium on 5G until there are some independent health studies that relate to children.



Susan Foster

September 2, 2017 at 11:15 pm

Reply

I agree with you on all points, Holly. The cumulative effect from Wifi plus phones and tablets in the classrooms is creating electrohypersensitivity (EHS) in many teachers & students. Teachers have lived longer and their vital organs carry a greater load of toxins;

thus the combination of chemicals + radiation appears to be triggering ill health for some teachers even before students. And the students who may seem more resilient now are the unwitting guinea pigs for this still-new technology. Will we see a tsunami of cancer and infertility among our young children as they come of age? To add a layer of 5G and cell towers every 100 yds or so seems insanity, to be honest.



S. Austin

August 29, 2017 at 1:41 pm

Reply

.....and here in Florida the Advanced Wireless Infrastructure Deployment Act passed overwhelmingly in the Legislature. As of 7/1/17 5G is now law. Over 400 cities objected based on the right of way take over. Citizens here are blissfully unaware – the media black out is on. We are bracing for impactbut we are not silent.

Thank you for a great article, Susan.



SGVH

August 31, 2017 at 5:58 am

Reply

That's terrible news re FLA. :(.....

Does anyone know if the 5G "mini cells" will show up at AntennaSearch.com or will the telecoms hide them so we can't tell where they are? I can't get out to "scout around" physically, so I have to do all my "searching" via internet.



Susan Foster

September 2, 2017 at 3:29 am

Reply

You can contact AntennaSearch and ask them your question directly at this link:

[http://www.antennasearch.com/sitestart.asp?](http://www.antennasearch.com/sitestart.asp?sourcepagename=&getpagename=frmcusthelpcontact&cmdrequest=)

[sourcepagename=&getpagename=frmcusthelpcontact&cmdrequest=](http://www.antennasearch.com/sitestart.asp?sourcepagename=&getpagename=frmcusthelpcontact&cmdrequest=)

You should be able to recognize "small cells" due to the size of the electrical equipment on the ground, some as big as refrigerators.

Susan Foster



September 2, 2017 at 11:26 pm

Reply

"There's a moment when you have to choose whether to be silent or to stand up." — Malala ...

Congratulations on not remaining silent. And you're welcome. Louise & Fearless Parent gave me a great opportunity to share an important message and I'm so glad I've been able to reach many of you.



Nayana

August 29, 2017 at 5:05 pm

Reply

Thank you Susan for your relentless pursuit for making general public aware of this fact and fighting upstream for betterment of Humanity.

Extremely articulate !



Susan Foster

September 3, 2017 at 12:20 am

Reply

Thank you so much, Nayana!



Martina Nicholson MD

August 29, 2017 at 8:33 pm

Reply

Thank you Susan, for educating me, and giving me this ballast of data. I am very worried about the risk of brain tumors, and autism rising in our society. Autism is the number one concern of most pregnant women, and we have no testing prenatally to be able to know who might develop it. This information on radiowave energy is the first reasonable answer I have been given for the massive increase. I am an OBGYN. I am now retired, but I care about parents, pregnancy, and the next generation, as a doctor as well as a mother and potentially a grandmother. I am going to send this information and the protest letter to our Congressional reps as well as to Governor Brown and our local state reps. It is important that we listen to the hard science and that we try to protect our society from this danger.



SGVH

August 31, 2017 at 5:44 am

Reply

To Dr. Nicholson, please contact Dietrich Klinghardt, MD, PhD, out in NW-USA (also youtube videos). He has done studies re

mothers/autism-children by literally going back to where the mothers lived/slept when they were pregnant & tested that environment for MWR-RF and DE ("Dirty Electricity"). The mothers with autistic children, their environments had very high readings whereas the mothers who did not have autistic children had had "clean" environments (no "electro-pollution") during their pregnancies.

So the game plan for anyone from here on in: Whoever is or wants to become pregnant, buy the testing meters ASAP for MWR-RF, Electric Fields, Magnetic Fields, etc. & test your environment! Smart Meters are also very bad, not just celltowers, cellphones, etc.

And great article by Ms. Foster!



Alex Haua

August 29, 2017 at 10:15 pm

Reply

I recently retired from Los Angeles County Fire Department and kudos to our local 1014 Union for putting a stop to cell towers being installed in our fire stations. I am more than fully aware about the detrimental effects Rf radiation has on our health, and current research supports this. Our leaders need to step up and put an end to widespread Rf radiation.



Susan Foster

August 30, 2017 at 1:09 am

Reply

Alex, your local 1014 was heroic in keeping 80+ FirstNET towers off fire stations in Los Angeles. I've never seen unions join forces the way you all did in LA — county and city fire, police, sheriff. You were unified and relentless. And you were right to fight the towers. I truly believe it was the fight you all put up in 2015 that helped gain the exemption in SB 649. But the problem is even though fire stations are exempt, firefighters will still go home to house with cell towers on lampposts right outside their homes. I've never seen anything like this bill. Please write to Gov. Brown and call your assembly member's district office and tell them to vote NO on SB 649. Go to this website, put in your address, and hit the link for your Assembly member. We have a chance

to defeat this bill if you can get friends/neighbors to make a quick call, as well. <http://findyourepr.legislature.ca.gov/>



Warren

August 30, 2017 at 12:40 am

Reply

I always wondered why the International Association of Firefighters. Res. 15 was so well done, especially for an "older" document. Now I know; you wrote it! Great job, then & now.



Susan Foster

September 2, 2017 at 11:33 pm

Reply

Thank you on both counts, Warren. I had wonderful help on Res. 15 from Janet Newton, Dr. Magda Havas, Lt. Ron Cronin (Boston Fire Department – Ret) and Assistant Fire Chief of Emergency Management Joe Foster (Vancouver Fire Rescue Services, British Columbia).



Kim

August 30, 2017 at 1:13 am

Reply

As the wife of a San Diego firefighter, this has long been a concern of mine... thank you for such a well-written and information-packed article. I'll be spreading the word and taking more action!



Susan Foster

September 3, 2017 at 10:27 am

Reply

Kim, thank you to your husband for his service and thank you for your sacrifice. Please share the article within the local IAFF internal network. Many firefighters still have not heard about the brain scan study of their brothers in Central CA, and fewer have ever heard of Resolution 15. I wrote it after we got the brain scan results showing damage in six of the six men tested. I was joined by US and Canadian experts and firefighters to craft the best possible language to call for further study funded by the IAFF. Res 15 passed at the IAFF convention in Boston (Aug 2004) by 80%, but was 1) never funded and 2) never honored. The moratorium on placing cell towers on fire stations was not honored, and never fought for by the IAFF. Right after

Res. 15 was introduced, Nextel offered a substantial donation to the DC headquarters to fund a Nat'l IAFF Olympiad. Thus this issue became almost adversarial between the IAFF HQ (Washington DC) and the locals. And as you may know, the chiefs are the ones who tend to lease out the space on stations/the grounds for cell towers. It's all about education and hopefully this article will enlighten the men/women of the fire service, both administration and rank & file, who read it. Thank you so much for passing the word and the article!

**MM59****August 30, 2017 at 2:11 am****Reply**

Sadly, CA is NOT trendsetting. Florida passed HB 687 back in June 2017. Tomorrow Sarasota tries to amend their Telecommunication Ordinance to adhere to HB 687 – this is my message to them. Wish me luck

Good afternoon Commissioners. My name is Marilynne Martin, I reside in Venice and I signed a speaker card.

You are about to make an important decision today that will affect every resident in the county. This ordinance will result in transmitters being eventually placed down every residential road in the county close to houses, windows where people, children sleep. Transmitting 24/7 with no ability for residents to shut off. The question is – Is it safe?

I say no, not emotionally, but with sufficient competent evidence that I have previously provided you. My main objection is the RF emission guidelines are outdated and issued in 1996 with much controversy that remains unsettled today due to lack of effort on the FCC's part. And the Docket to update them has not yet been completed. A critical study on RF emissions commissioned by the FDA to the NTP has not yet been completed. The NTP released partial results in May 2016 because they believed it had significant importance to the public and such results are not trending towards this technology having no non-thermal effects and should not be ignored or war-gamed as the industry is doing. A reminder Commissioners, the current FCC emission guidelines do not protect us from non-thermal effects.

My assessment, the FCC's approval of 5G prior to the completion of Docket 13-84 and the NTP study constituents gross negligence of their important duties. Prove me wrong Commissioners with sufficient competent evidence.

I am tired of the two buttons.

Button #1 – used by government officials and agencies – “Section 704 of the 1996 Telecommunications Act prohibits me from considering health in these matters.”

Button # 2 – used by industry – “My equipment complies with FCC guidelines therefore it is safe. In fact so safe like a baby monitor!”

Commissioners – No more hiding behind Section 704 . When there is sufficient competent evidence that the FCC is not doing their job, Sarasota County Commissioners have a duty to step in to protect the health of its citizens. (Wolfe Please) I want you to make these affirmations today to us, your constituents, if you are planning to vote for this ordinance and back it up with sufficient competent evidence, not hide behind Section 704.

Industry – I want you to take full accountability for your equipment and not hide behind the FCC – an agency you control. Agree to take full liability for any future health damages regardless of whether your equipment meets FCC guidelines or not. Or back it up with sufficient competent evidence why you should not be liable for your equipment.

Commissioners – remember that the FCC never addressed the electro-sensitive population as promised. ADA does NOT cover them so Jack Wilhelm can't protect them. EHS is real, Dr. Gro Brundtlandt, a medical doctor who once run the country of Norway & the WHO, told you so in her own words.

Commissioner Moran – property rights defender – how does not giving me the right of refusal of this equipment on my property not impede my property rights.

Remember – the urgency of 5G is that Johnnie has to endure a 30 second download of that crappy Hollywood movie instead of 2 seconds and Mary can't have her Internet connected toaster. Please note this so-called congestion on the

current network has been caused by the wireless industry offering unlimited data plans.

Commissioners – show me your FACTS and tell me you will amend Section 118-112 of this proposed ordinance and won't seek indemnification for any health harms resulting from the forced placement of this equipment on residents property.

Commissioners. This County needs to push back. Do not roll out 5G until the NTP completes their study and the FCC completes Docket 13-84. And if you don't have the courage to do so, at a minimum put Consent/Right of Refusal in the Ordinance.

Slow down on 5G and push back on Tallahassee and DC for the sake of your resident's health.

Sarasota County Commissioners – Affirmations to their Residents On Ordinance 2017-015

I, Commissioner Moran, Caragiulo, Detert, Maio, Hines, hereby affirm that the current FCC RF emission guidelines, for which this small cell equipment will presumably comply with under Ordinance 2017-015, will not harm the health of the Citizens of Sarasota.

I fully support former FCC Chairman Wheeler's decision to approve 5G for roll-out in our community before the FCC Commission completes Docket 13-84 and before receiving the full report of the National Toxicology Program (NTP) RF rat study report.

I affirm the above having full knowledge that

1) FCC guidelines were issued in 1996 under controversy and are based on 1986 and prior scientific evidence and it is undisputed that they a) only protect from heating (thermal), b) only consider acute (short-term) exposure and c) do not take into account vulnerable populations (children, pregnant women, and the elderly),

- 2) In 2011 The World Health Organization (WHO) classified radiofrequency electromagnetic fields as possibly carcinogenic to humans (Group 2B) and many experts are urging the WHO to reclassify it as probably carcinogenic to humans (Group 2A) ,
- 3) The 2012 GAO audit report recommended that the FCC update such guidelines and the FCC opened Docket 13-84 which has not yet been completed,
- 4) The FDA commissioned NTP rat study results will not be completed until the end of 2017, however in May 2016 the NTP released partial results showing increased heart and brain cancers consistent with studies that led to WHO classification,
- 5) Entities issued permits under Ordinance 2017-015 will not be liable for any health related damages to the citizens of Sarasota if their equipment meets these FCC RF emission guidelines.



Susan Foster

September 3, 2017 at 12:20 am

Reply

In a word?: Brilliant. I'm sure you got everyone's attention. You won my admiration, Marilynne.



Janet B.

August 30, 2017 at 4:59 pm

Reply

Thank you for this article. People are always amazed that when fighting a cell tower at your local planning commission, you can't cite health concerns, or the city/county may get sued by the big telecom giants if it looks like they based their denial on health issues instead of aesthetics. But at least right now, we still have the ability to appeal to local planning officials. If this bill passes, the telecom industry will have free and total reign over our kids lives. It's disgusting.



Susan Foster

September 3, 2017 at 12:31 am

Reply

It is, without doubt, a state by state telecom takeover. And these bills are passing, because legislators receive generous donations from telecom and because many citizens think this will be an answer to

dropped calls and slow internet. The truth is 5G is for faster downloads, but that is mainly movies/videos. 5G ushers in a 1984-type world where appliances are literally communicating with each other. And with a touch of The Jetsons, 5G is for self-driving cars. But the resistance to these bills just hasn't been there. The outrage hasn't been there. And it needs to be. Sadly, I think it's going to be too late. People will wake up to see cell towers in their yards or across the street and then be stunned to find out they have absolutely no one to help them. We are losing our rights with this bill. As you pointed out, Janet, we have had precious few rights left. I think most would fight to preserve those rights if they understood these bills better.



Anonymous

September 17, 2017 at 12:51 pm

Reply

Thank you Brave lady for being on the front lines to defend our future!



Susan Foster

September 27, 2017 at 12:33 am

Reply

You are most welcome. It's an honor to help.



Natalie

October 3, 2017 at 11:48 pm

Reply

I wonder, in part, if this law is about allowing telecom companies to occupy these spaces rent-free.

I didn't learn this until the leadership of my church presented the annual budget, but apparently a major cell phone company was renting our steeple to transmit signals! While many people are bemoaning the loss of 25K/year, I'm relieved to see this tenant gone.

Even so, however, that those cell phone towers are becoming quaint. I now know that telecom is occupying spaces incognito near our homes, schools, jobs, and even places of worship.



Susan Foster

October 23, 2017 at 11:52 am

Reply

Natalie, you're right. The law, in part, was written to give telecom the right to occupy county and city property not quite rent-free, but the rents the cities/counties could charge was capped. Thanks to tremendous opposition to this bill from municipalities due to the rent cap and also due to growing opposition based on health concerns, Gov. Brown vetoed SB 649 a few minutes before midnight on Oct 15th. Yet the bill will be back in January with the next legislature — as in most states across the country. You make an excellent point about the hidden towers in church steeples and virtually everywhere. We don't see the concealed towers, yet what we are all witness to is a growing sense of people becoming ill at younger ages. This is across the board — all age groups. Communities are starting to sue wireless companies where obvious clusters of serious illness show up around a tower that was "guaranteed to be safe" by telecom. These lawsuits are hard to win, because the Telecom Act of 1996 prohibits most lawsuits on health grounds (seriously). But these lawsuits draw attention to a profoundly serious problem parents must raise their voices about if change is ever to occur.



Mark Steele

January 5, 2018 at 5:30 am

Reply

5G. We have already had the covert roll out of of 5-fth Generation telecoms transmitters on NEW LED Street lighting in the borough of Gateshead UK. Total flying insect population collapse. Nose Bleeds. Miscarriage. No Small Birds, No Bats, Ecological disaster. This is a Humanitarian Crime.



Susan Foster

January 18, 2018 at 12:50 am

Reply

Mark, it is important to document the changes that are occurring, and do a health/symptom survey of those in 5G areas. You might contact Eileen O'Connor, Director of the UK's Radiation Research Trust eileen@radiationresearch.org to determine the how to make sure what is happening in Gateshead is properly chronicled and shared with

government and particularly the media. Government has a big stake in all this. Going to the media is essential.

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Do Vaccines Cause Cancer?



CDC Scientist Connects Vaccines to Tics, Language Delay -- Recording #4



10 Tips to Ease Your Child Into the GAPS Diet



Honest Disagreement in a Pro-Vaccine World



Feminism and the Election: The Gift of Acceleration



What About the Immunocompromised?



Are You "Bought"? The Film That Will Blow Your Mind

Supplementing For Low Vitamin D? Not So Fast...



Enemas



The Epic Troubleshooting Guide to Coffee Enemas

Parents: Should You Nix the WiFi?



2014 Guide to Non-Toxic Lunch Gear for Kids



Cupertino, We Have A Problem. WiFi & Kids.

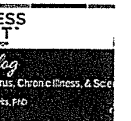


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