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BY E-MAIL TJMACJR@PACBELL.NET

February 24, 2009

Mr. Thomas T. McMurray
PWM, Inc.
2039 Williams Street
Eureka, California 95501

Dear Tom:

As you requested, we have analyzed the RF exposure conditions near the base station (Site No. SF40891A) proposed to be located at 3014 J Street in Eureka, California. An electronic copy of our report is enclosed. Fields in publicly accessible areas at the site are calculated to be well below the applicable limits.

We appreciate the opportunity to be of service and would welcome any questions on this material. Please let me know if we may be of additional assistance.

Sincerely yours,

Bill Hammett

William F. Hammett

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Enclosure

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T-Mobile • Proposed Base Station (Site No. SF40891A)
3014 J Street • Eureka, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of T-Mobile, a personal wireless telecommunications carrier, to evaluate the base station (Site No. SF40850B) proposed to be located at the Hebrew Christian Center at 3014 J Street in Eureka, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. In Docket 93-62, effective October 15, 1997, the FCC adopted the human exposure limits for field strength and power density recommended in Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar exposure limits. A summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Personal Wireless Service	Approx. Frequency	Occupational Limit	Public Limit
Broadband Radio ("BRS")	2,600 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Advanced Wireless ("AWS")	2,100	5.00	1.00
Personal Communication ("PCS")	1,950	5.00	1.00
Cellular Telephone	870	2.90	0.58
Specialized Mobile Radio ("SMR")	855	2.85	0.57
Long Term Evolution ("LTE")	700	2.33	0.47
[most restrictive frequency range]	30–300	1.00	0.20

General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The

transceivers are often located at ground level and are connected to the antennas by coaxial cables about 1 inch thick. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. Along with the low power of such facilities, this means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation," dated August 1997. Figure 2 attached describes the calculation methodologies, reflecting the facts that a directional antenna's radiation pattern is not fully formed at locations very close by (the "near-field" effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the "inverse square law"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by T-Mobile, including drawings by Berkey Engineering, dated December 3, 2008, it is proposed to mount three RFS Model APXV18-206516L-C directional panel antennas on a 50-foot pole to be sited directly adjacent to the Hebrew Christian Church, located at 3014 J Street in Eureka, California. The antennas would be mounted at an effective height of about 42 feet above ground and would be oriented toward 0°T, 100°T, and 240°T. The maximum effective radiated power in any direction would be 3,000 watts, representing simultaneous operation at 2,000 watts for PCS and 1,000 watts for AWS.

Located in front of the church, each about 55 feet away from the proposed pole, are two existing 44-foot poles on which are mounted similar directional panel antennas for two other wireless telecommunications carriers. For the limited purpose of this study, transmitting facilities of those carriers are assumed to be as follows:

Carrier	Service	Maximum ERP	Antenna Model	Approximate Height
U.S. Cellular	Cellular	2,000 watts	BXA80080-6	44 ft
Edge Wireless	PCS	2,000	RV9017	44

Study Results

For a person anywhere at ground, the maximum ambient RF exposure level due to the proposed T-Mobile operation by itself is calculated to be 0.0051 mW/cm^2, which is 0.51%* of the applicable public exposure limit. The maximum calculated cumulative level at ground, for the simultaneous operation of all three carriers, is 2.8%† of the public exposure limit, the maximum calculated cumulative level at the second-floor elevation of the church building is 3.9%‡ of the public limit, and the maximum level at any nearby residence§ is 2.7%** of the public limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels.

Recommended Mitigation Measures

Due to their mounting locations, the T-Mobile antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. To prevent occupational exposures in excess of the FCC guidelines, no access within 4 feet directly in front of the T-Mobile antennas themselves, such as might occur during maintenance work on the rooftop penthouse, should be allowed while the base station is in operation, unless other measures can be demonstrated to ensure that occupational protection requirements are met. Posting explanatory warning signs†† at the antennas, such that the signs would be readily visible from any angle of approach to persons who might need to work within that distance, would be sufficient to meet FCC-adopted guidelines. Similar measures should already be in place for the other carriers at the site; applicable keep-back distances have not been determined as part of this study.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that the base station proposed by T-Mobile at the Hebrew Christian Center at 3014 J Street in Eureka, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure

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* That is, 99.49% below the standard.

† That is, 97.2% below the standard.

‡ That is, 96.1% below the standard.

§ Single-story, located about 75 feet away, based on aerial photographs from Google Maps.

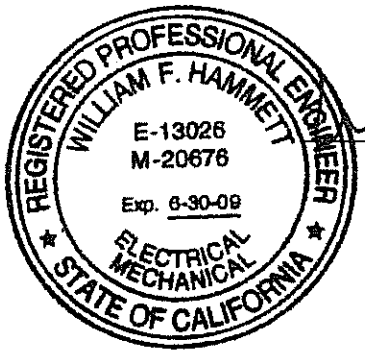
** That is, 97.3% below the standard.

†† Warning signs should comply with OET-65 color, symbol, and content recommendations. Contact information should be provided (*e.g.*, a telephone number) to arrange for access to restricted areas. The selection of language(s) is not an engineering matter, and guidance from the landlord, local zoning or health authority, or appropriate professionals may be required.

conditions taken at other operating base stations. Posting of explanatory signs is recommended to establish compliance with occupational exposure limitations.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2009. This work has been carried out by him or under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



William F. Hammett, P.E.

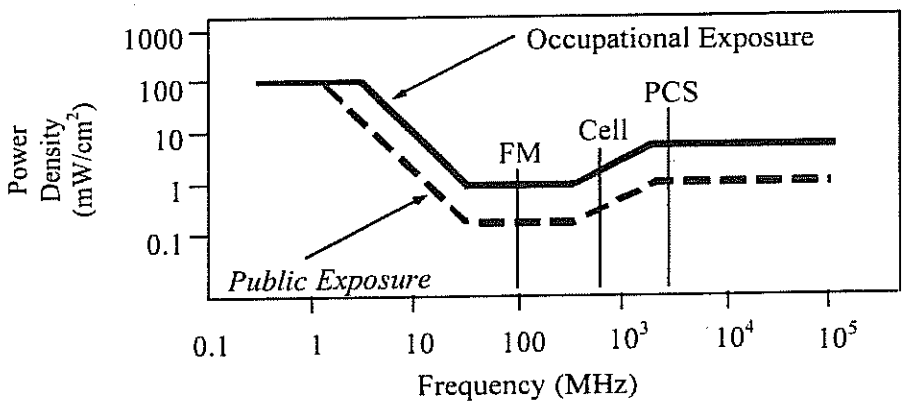
February 24, 2009

FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency	Electromagnetic Fields (f is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm^2)	
0.3 – 1.34	614	*614*	1.63	*1.63*	100	*100*
1.34 – 3.0	614	*823.8/f*	1.63	*2.19/f*	100	*180/f^2*
3.0 – 30	1842/ f	*823.8/f*	4.89/ f	*2.19/f*	900/ f^2	*180/f^2*
30 – 300	61.4	*27.5*	0.163	*0.0729*	1.0	*0.2*
300 – 1,500	$3.54\sqrt{f}$	*$1.59\sqrt{f}$*	$\sqrt{f}/106$	*$\sqrt{f}/238$*	f/300	*f/1500*
1,500 – 100,000	137	*61.4*	0.364	*0.163*	5.0	*1.0*



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

Near Field.
Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm^2,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm^2,

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and
P_{net} = net power input to the antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of the antenna, in meters, and
η = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

Far Field.
OET-65 gives this formula for calculating power density in the far field of an individual RF source:

$$\text{power density } S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}, \text{ in } mW/cm^2,$$

where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.