– Ripon Unified School District –
Sprint Base Station No. SF52xc031
1660 Stanley Drive • Ripon, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained by Ripon Unified School District to evaluate the Sprint wireless telecommunications base station (Site No. SF52xc031) located at 1660 Stanley Drive in Ripon, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Executive Summary

Sprint had installed directional panel antennas on a tall pole sited on the campus of Weston Elementary School, located at 1660 Stanley Drive in Ripon. All exposure levels under the existing conditions for anyone in publicly accessible areas nearby were measured to be well below the federal standard.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. 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 wireless services are as follows:

Wireless Service Band	Transmit Frequency	"Uncontrolled" Public Limit	Occupational Limit (5 times Public)
Microwave (point-to-point)	1–80 GHz	1.0 mW/cm^2	5.0 mW/cm^2
Millimeter-wave	24–47	1.0	5.0
Part 15 (WiFi & other unlicensed)	2–6	1.0	5.0
BRS (Broadband Radio)	2,490 MHz	1.0	5.0
WCS (Wireless Communication)	2,305	1.0	5.0
AWS (Advanced Wireless)	2,110	1.0	5.0
PCS (Personal Communication)	1,930	1.0	5.0
Cellular	869	0.58	2.9
SMR (Specialized Mobile Radio)	854	0.57	2.85
700 MHz	716	0.48	2.4
[most restrictive frequency range]	30–300	0.20	1.0

General Facility Requirements

Antennas for base station use are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. Since the antennas need an unobstructed area in

front of them, it is generally not possible for exposure conditions to approach the FCC limits without being physically very near the antennas.

Site Description

The site at 1660 Stanley Drive in Ripon was visited by Mr. David Kelly, a qualified field technician employed by Hammett & Edison, Inc., during normal business hours on December 21, 2018, a non-holiday weekday. Sprint had installed directional panel antennas within a cylindrical enclosure at the top of a tall pole sited near the south end of the Weston Elementary School campus, located at that address. Access to the antennas was restricted by their mounting location and height. Explanatory signs* had been posted on the fenced enclosure surrounding the base of the pole. There were observed no other wireless telecommunications base stations located at this site or nearby.

Measurement Results

The measurement equipment used was a Wandel & Goltermann Type EMR-300 Radiation Meter with Type 18 Isotropic Electric Field Probe (Serial No. C-0010). The meter and probe were under current calibration by the manufacturer. The maximum observed power density level for a person at ground near the site was 0.000032 mW/cm^2, which is 0.016% of the most restrictive public limit. The three-dimensional perimeter of RF levels equal to the public exposure limit did not reach any publicly accessible areas.

No Recommended Mitigation Measures

Due to their mounting location and height, the Sprint antennas were not accessible to the general public, and so no additional mitigation measures are necessary to comply with the FCC public exposure guidelines. It is presumed that Sprint, as an FCC licensee, takes adequate precautions to ensure that its employees or contractors comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

* Signs complied with OET-65 color and symbol recommendations. Contact information was provided in English to arrange for access to restricted areas (the choice of language(s) is not an engineering matter).

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that the Sprint base station located at 1660 Stanley Drive in Ripon, California, as installed and operating at the time of the visit, complies with the FCC guidelines limiting public exposure to radio frequency energy and, therefore, does not for this reason cause a significant impact on the environment.

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, 2019. This work has been carried out 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.

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