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NON-IONIZING ELECTROMAGNETIC EXPOSURE ANALYSIS
AND

ENGINEERING CERTIFICATION

PREPARED FOR

PWM, Inc.

PROPOSED 50-FOOT AT&T POLE

3014 J STREET

MODIFIED PERSONAL WIRELESS TELECOMMUNICATIONS FACILITY

EUREKA

HUMBOLDT COUNTY, CALIFORNIA

MAY 2013

INTRODUCTION

Hatfield & Dawson Consulting Engineers has been retained by PWM, Inc., to evaluate the modified AT&T personal wireless telecommunications facility CNU0929 / CCL00929, designator "Henderson", for compliance with current Federal Communications Commission (FCC) and local guidelines regarding Public exposure to radiofrequency (RF) electromagnetic fields (EMFs).

Information furnished by PWM indicates that the modified AT&T facility will have panel antennas disguised within a new 50-foot pole at the J Street wireless facility, 3014 J Street, Eureka, CA 95501.

According to PWM all of the AT&T panel antennas will be mounted at about the 45-foot level on the pole. All other antennas on the poles at the J Street facility are at least 35 feet above ground level. Therefore all transmitting antennas on all of the poles are well above head height for persons inside nearby structures, or standing at ground level on or near the J Street facility.

The combined effect of all AT&T operations, in combination with existing wireless operations, to the Public RF exposure environment will be below the FCC Public exposure limits.

The operation of the modified AT&T facility, in combination with the existing co-located wireless facilities, will NOT create significant RF exposure conditions in any occupancy, habitable area or publicly accessible area.

MODIFIED AT&T OPERATIONS

The modified AT&T facility may operate within the 700MHz band, the 850MHz Cellular band, and the Personal Communications Service (PCS) and Advanced Wireless Service (AWS) frequency bands.

The approximate range of transmit frequencies, and the Public MPE limits for each operation are as follows:

OPERATION	FREQUENCY(MHZ)	Public Limit
700 MHz	704 - 746	0.469 mw/cm^2
Cellular	869 - 894	0.579 " "
PCS & AWS	~ 1,800 - 2,100	1.000 " "

RF power densities and exposure conditions are predicted in accordance with methods described in ***Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, August 1997.***

Wireless facilities are required to comply with the FCC "Rules & Regulations" **47 CFR §1.1310, Radiofrequency radiation exposure limits.** The OET Bulletin 65 describes the methods established by the FCC for predicting compliance with the FCC-specified exposure limits. Compliance is determined by comparing RF field predictions with the Public MPE limits allowed by the FCC rules, as specified in **47 CFR §1.1310.**

The Public RF exposure environment due to the proposed AT&T operations will be well below the FCC limits. Previous studies of the J Street site have indicated that the ground-level exposure environment was less than 3% of the Public MPE limit, and 7.6% of the Public MPE limit within the nearby church. The modifications to the AT&T facility will not significantly increase the Public exposure environment. It is expected that the Public exposure environment near the J Street pole will be less than 8% of the Public MPE limit after the AT&T facility is modified.

Thus the new and modified AT&T operations at the J Street site will not have a significant environmental impact, as defined by the FCC Public MPE limits.

FCC COMPLIANCE

The FCC has determined through calculations and technical analysis that personal wireless facilities such as those operated by AT&T are highly unlikely to cause human RF exposures in excess of FCC guideline limits. In particular, 700 MHz, cellular, and PCS facilities with non-building-mounted antennas greater than 10 meters (about 33 feet) above ground level are considered to have such a low impact on overall exposure conditions that they are "categorically excluded" (i.e., exempt) from the requirement for routine environmental assessment regarding RF exposure hazards.

Thus according to FCC rules, the modified AT&T facility, with all antennas centered at approximately 40 feet and 45 feet above ground level, is exempt from further RF safety environmental assessment because it is presumed to be in compliance with the FCC RF exposure rules.

The modified AT&T personal wireless telecommunications facility is expected to be compliant with FCC rules regarding Public RF exposure provided that direct access to the antennas on the pole is positively restricted.

Because the modified personal wireless telecommunications facility will be in compliance with federal rules, it will also be in compliance with local regulations concerning RF emissions. The AT&T facility will provide Personal Wireless Services as described in the Telecommunications Act of 1996. Section 704(a) of the Act (same as federal rule part 47 U.S.C. §332(c)(7)) preempts local decisions premised directly or indirectly on the environmental effects of RF emissions, assuming that the wireless facility is in compliance with the rules of the FCC.

The following is the complete text of 47 U.S.C. § 332(c)(7)(B)(iv):

“No State or local government or instrumentality thereof may regulate the placement, construction, or 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.”

Transmission equipment for the AT&T facility is certified by the FCC under the equipment authorization procedures set forth in the FCC rules. This assures that the wireless facility will transmit within the desired base-station frequency bands, and at authorized power levels. The AT&T facility will operate in accordance with all FCC rules regarding power, signal bandwidth, interference mitigation, and good RF engineering practices.

The existing and modified AT&T wireless operations at the J Street site will not have a significant environmental impact as defined by the FCC Public MPE limits. Furthermore, the modified AT&T facility will not cause the existing co-located wireless facilities to exceed NIER exposure standards.

CONCLUSIONS BASED ON CALCULATIONS AND FEDERAL AND LOCAL REGULATIONS

The modified AT&T personal wireless telecommunications facility, together with the existing radio services with transmitting antennas on the J Street pole, will be in compliance with current FCC and local rules regarding Public exposure to radiofrequency electromagnetic fields.

This conclusion is based on information supplied by PWM, Inc. and AT&T, and the comparison of predicted RF conditions in specific areas with the corresponding safe exposure limits set forth in FCC rules, guidelines and recommendations.

The FCC exposure limits are based on recommendations by federal and private entities with the appropriate expertise in human safety issues.

Under the Commission's rules, licensees are required to ensure compliance with the limits for maximum permissible exposure (MPE) established by the FCC. These limits have been developed based on guidelines provided by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and the National Council on Radiation Protection and Measurements (NCRP). Both the NCRP and IEEE guidelines were developed by scientists and engineers with a great deal of experience and knowledge in the area of RF biological effects and related issues.

To ensure full compliance with current FCC rules regarding human exposure to radiofrequency electromagnetic fields, the AT&T transmitters should be turned off whenever maintenance and repair personnel are required to work in the immediate vicinity of AT&T's antennas.

This safety procedure should apply to all existing and future wireless transmission facilities at the J Street site. All instances of antenna-related work require that the subject antennas be completely de-energized.