



WAY-FM MEDIA GROUP, INC

RF Compliance Analysis - KXWA, Loveland, CO

WAY-FM Media Group, Inc., is the licensee of KXWA-FM and holder of Construction Permit BPED-20050816ABA for modification of the license of KXWA-FM to increase the effective radiated power from 36kw to 80kw (V) 0.1kw(H) at the licensed location.

Special Operating Condition #8 on the underlying construction permit requires the applicant to make proper radiofrequency electromagnetic (RF) field strength measurements throughout the transmitter site area to determine if there are any areas that exceed the FCC guidelines for human exposure.

The facility was constructed on November 20, 2008 and operated at the currently licensed effective radiated power of 36kw until measurements were confirmed as required in special operating condition #7 by the NOAA Laboratory in Boulder, Colorado. Since that time, the facility has operated at 80kw ERP as designated in the underlying construction permit.

The applicant recognizes that there is no substitute for field measurements of actual RF field strength in demonstrating safety in the workplace. However, extenuating circumstances has not permitted this to be done in the desired manner and the applicant respectfully requests consideration of the following analysis to demonstrate that the KXWA power increase will not have any significant environmental impact.

Construction on the installation of the new antenna system for KXWA was completed on November 20, 2008; however on that very evening and into the next day a particularly harsh winter storm moved into the area and conditions have not been favorable for actual RF field readings to be performed at the site. The tower site is atop Buckhorn Mountain, at 8,280 feet AMSL, a full 3,000 feet above the neighboring terrain. As such, deep snow cover and harsh winter conditions exist for most of 5 months beginning in late fall. Unfortunately, this time began the very evening of the completion of the installation of the KXWA antenna system. The site currently remains with several feet of snow cover with temperatures near zero and winds approaching 50 miles per hour at times. As such, outside RF field measurements have not been available since the construction was complete and before the filing deadline of this application.

In an effort to demonstrate compliance with this special operating condition, the applicant respectfully request consideration of this analytical analysis of the calculated field strengths for human exposure at the site, based on actual RF field measurements made recently on the site and the antenna model plots for the actual antenna installed.

First, a recent RF field measurement indicates that the sum of all facilities on the location, including the KXWA operation at 36kw ERP with a 4-bay 0.5 wave vertical antenna is far below the minimum guidelines for human exposure. From BLH-20080311AAU, granted 4/24/2008 for station KYEN-FM, FACID 164151:

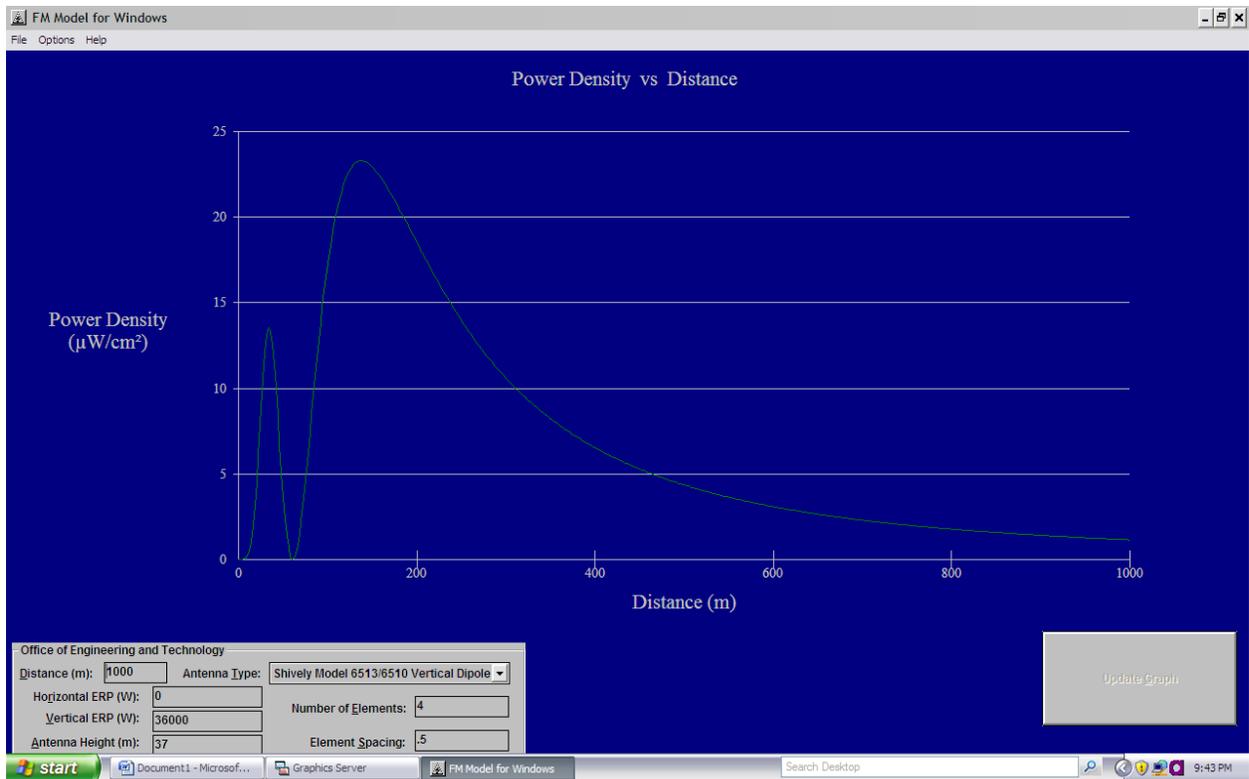
Radiofrequency electromagnetic (RF) field strength measurements were conducted at the site to determine if there were any areas within the site compound or adjoining areas where the level of radiofrequency electromagnetic energy exceeded the exposure levels defined in the FCC Guidelines (OET Bulletin No. 65, Edition 97-01, August 1997). A Narda EMR-300 meter (Model 2244/31, Serial No. AU0040) with a Narda Type 25.2 Probe (Model 2244/90.62, Serial No. F-0012) was employed for the measurements. The meter was calibrated and operated according to manufacturer's instructions and a grid was walked about the compound and adjoining areas to take the required measurements. The highest level of radiofrequency electromagnetic energy was found directly to the north of the compound just outside the fenced area around the tower. At this location the level peaked at **68% of uncontrolled standards** (0.136 mW/cm²), therefore it is believed that this site is in compliance with FCC guidelines. The area around the building and the tower is fenced to prevent unauthorized persons from accessing the tower. Warning signs concerning possible RF hazards are posted on the fence.

Using the 0.136 mW/cm² value, a comparison is made between the antenna system and effective radiated power of KXWA at the time of the KYEN measurement, and the constructed KXWA antenna system and effective radiated power, using the antenna model plots for the antenna systems. Also included is the 6-bay 0.5 wave spaced antenna originally specified in the underlying construction permit. As the 8-bay 0.5 wave antenna has less downward radiation, it has even less of an environmental impact than the 6-bay specified.

KXWA RFR COMPARISON

DECEMBER 2008

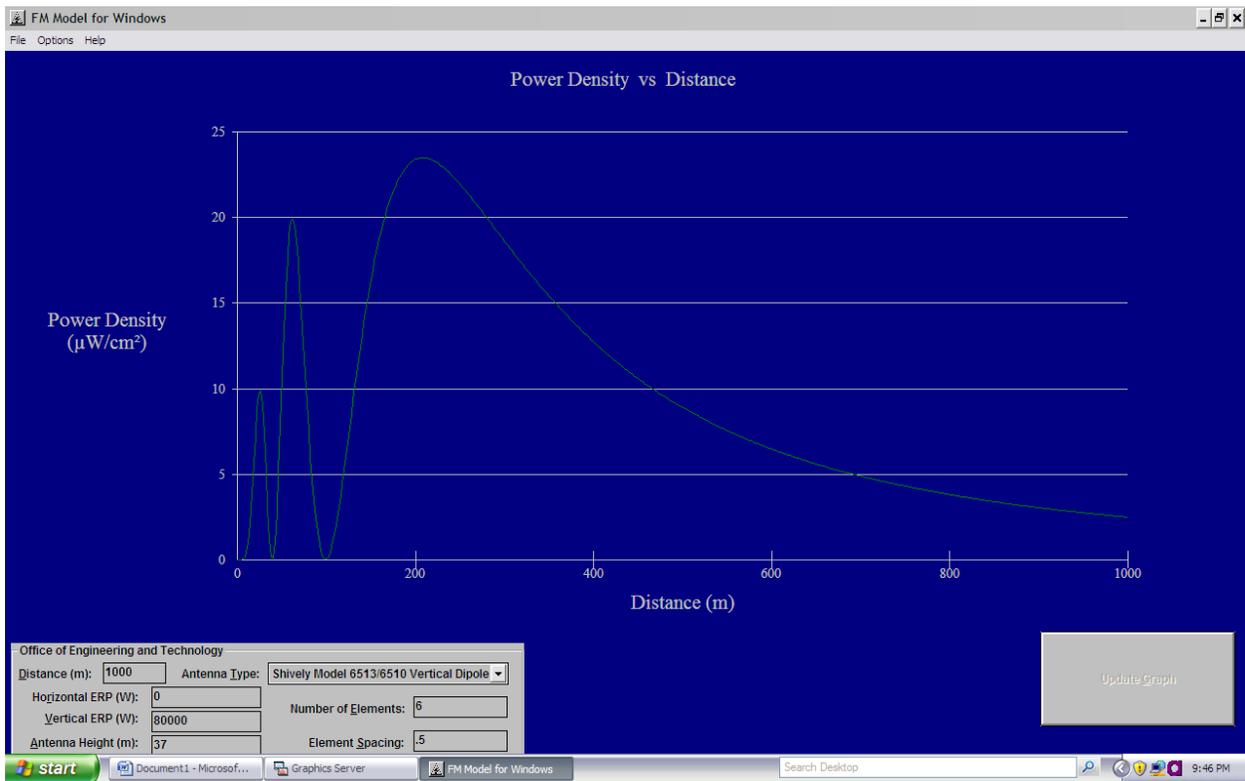
KXWA LIC. 36 Kw 4 bay Shively v. pol. Antenna 36 kW ERP.



KXWA RFR COMPARISON

DECEMBER 2008

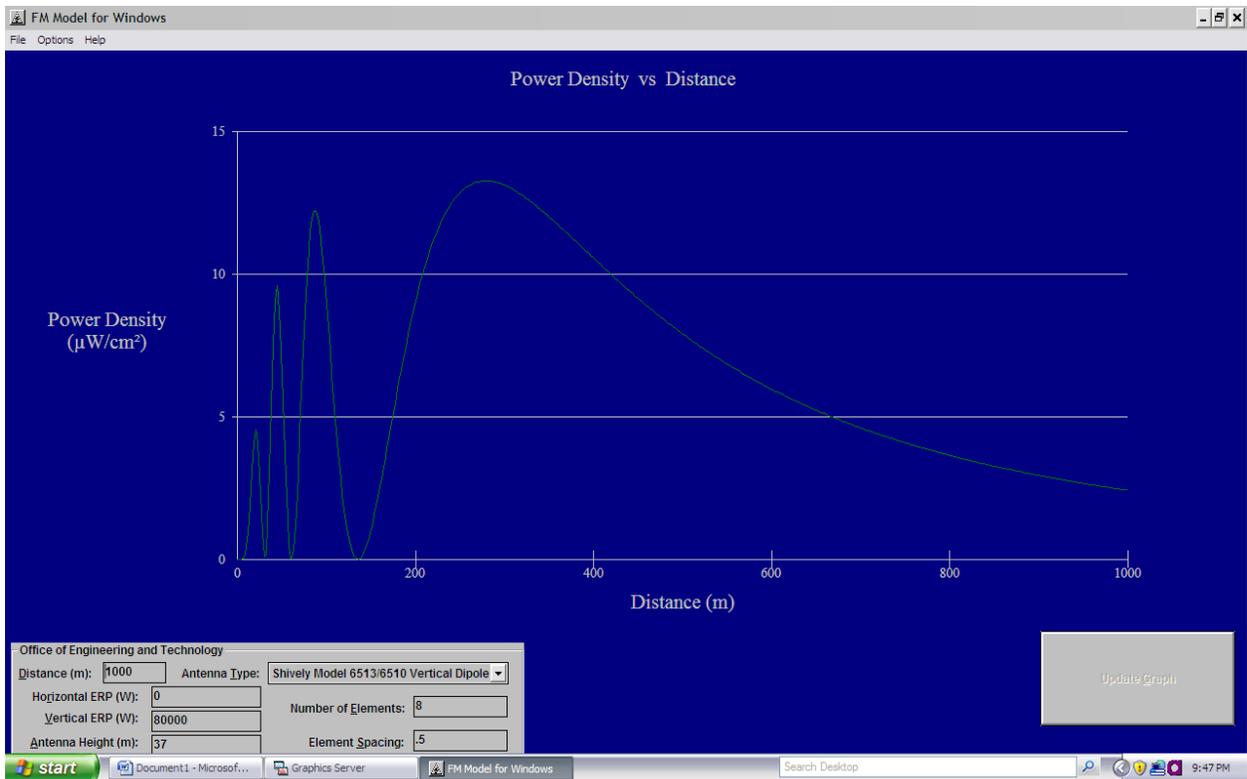
KXWA CP 6 bay Shively v. pol. Antenna 80 kW ERP.



KXWA RFR COMPARISON

DECEMBER 2008

KXWA Lic. Application 8 bay Shively v. pol. Antenna 80 kW ERP.



DECEMBER 2008

Power Density – Microwatts Per Centimeter Squared

<u>Meters From Tower</u>	<u>Licensed Antenna</u>	<u>Installed Antenna</u>	<u>Installed Exceeds Licensed</u>
10	0.2165	0.453	0.2365
20	4.462	4.537	0.075
30	12.701	0.10	----
40	11.463	7.531	----
50	3.617	6.443	2.826
60	0.10	0.10	----
70	2.222	4.415	2.193
80	7.369	10.799	3.43
90	12.820	12.006	----
100	17.271	8.979	----
110	20.335	4.864	----
120	22.202	1.732	----
130	23.124	0.201	----
140	23.256	0.113	----
150	22.915	1.035	----
160	22.270	2.530	----
170	21.439	4.262	----
180	20.505	6.000	----
190	19.520	7.623	----
200	18.531	9.042	----
210	17.520	10.220	----

KXWA RFR COMPARISON – PAGE 5

DECEMBER 2008

Power Density – Microwatts Per Centimeter Squared

<u>Meters From Tower</u>	<u>Licensed Antenna</u>	<u>Installed Antenna</u>	<u>Installed Exceeds Licensed</u>
220	16.369	11.172	----
230	15.636	11.913	----
240	14.765	12.464	----
250	13.946	12.851	----
300	10.586	13.107	2.521
350	8.212	11.998	3.786

A comparison of the plots for the 80 kW ERP installed 8 bay, 0.5 wave spaced antenna and the licensed 36 kW ERP 4 bay, 0.5 wave spaced antenna show a significant overall reduction in RF power density. The above table compares the 4-bay licensed and the 8-bay constructed facility RFR power density values. It can be seen that within the first 100 meters, the 80 kW exceeds the RF field values of the license facility by only 3.43 microwatts at 80 meters from the tower base. For the measured power density to reach 200 microwatts, the acceptable limit for human exposure to RF fields, the KXWA power density would need to be increased by 64 microwatts, and that assumes that KXWA was the greatest contributor at the point where KYEN measured the greatest power density of 136 microwatts.

Given the power density values associated with the licensed and installed antenna systems, it is believed to be mathematically impossible for the combined power density of all stations to even approach FCC guideline values when taking into account the KYEN measurement results and the KXWA computed RF power density values.

The applicant respectfully requests that the processing staff consider this analysis as compliance with this special operating condition.