

ENVIRONMENTAL STATEMENT

The proposed modification has been analyzed with respect to OET Bulletin 65 Edition 97-01 entitled *Evaluating Compliance With FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*. The instant application proposes operation of WRTQ at an antenna at height of 122 meters above ground level (AGL) with an effective radiated power (ERP) of 13.5 kilowatts in the vertical polarization plane and 1.36 kilowatts in the horizontal elevation plane. Using formula (9) in the OET bulletin, the free-space (worst-case) power density is calculated as follows:

$$S = \frac{33.4 \times \text{ERP}}{R^2}$$

$$S = \frac{33.4 \times (13500V + 1360H)}{(122 - 2)^2}$$

$$S = 34.5 \mu\text{W}/\text{cm}^2$$

where: S = power density in $\mu\text{W}/\text{cm}^2$
ERP = power in watts (vertical and horizontal components added together)
R = distance in meters (subtract 2m to account for height of person)

This calculation does not take into account the vertical (elevation) pattern of the antenna, and therefore represents truly a worst-case power density which assumes uniform radiation characteristics at all elevation angles, and does not take into account the true hypotenuse “slant” length at locations distanced horizontally from the tower base. Nonetheless, the resulting value, $34.5 \mu\text{W}/\text{cm}^2$, represents only 17.3 percent of the $200 \mu\text{W}/\text{cm}^2$ maximum allowable exposure limit for uncontrolled access.

Co-located station WXKW operates with an effective radiated power of 50,000 watts in both the horizontal and vertical polarization planes. WXKW transmits using a Dielectric DCR series 6-bay half-wave-spaced non-directional antenna. The predicted power density at ground level for WXKW was determined via the *FM Model for Windows* software published by the Commission’s Office of Engineering and Technology. This software utilizes algorithms and data for specific antenna types, including that used by WXKW, to predict the resulting power density shown in the included plot. The maximum power density from WXKW experienced by a person on the ground is $1.9 \mu\text{W}/\text{cm}^2$ at a distance of 840 meters from the base of the tower. When added to the worst-case value of $34.5 \mu\text{W}/\text{cm}^2$ calculated above for WRTQ, the resulting value, $36.3 \mu\text{W}/\text{cm}^2$, represents only 18.2 percent of the $200 \mu\text{W}/\text{cm}^2$ maximum allowable exposure limit for uncontrolled access.

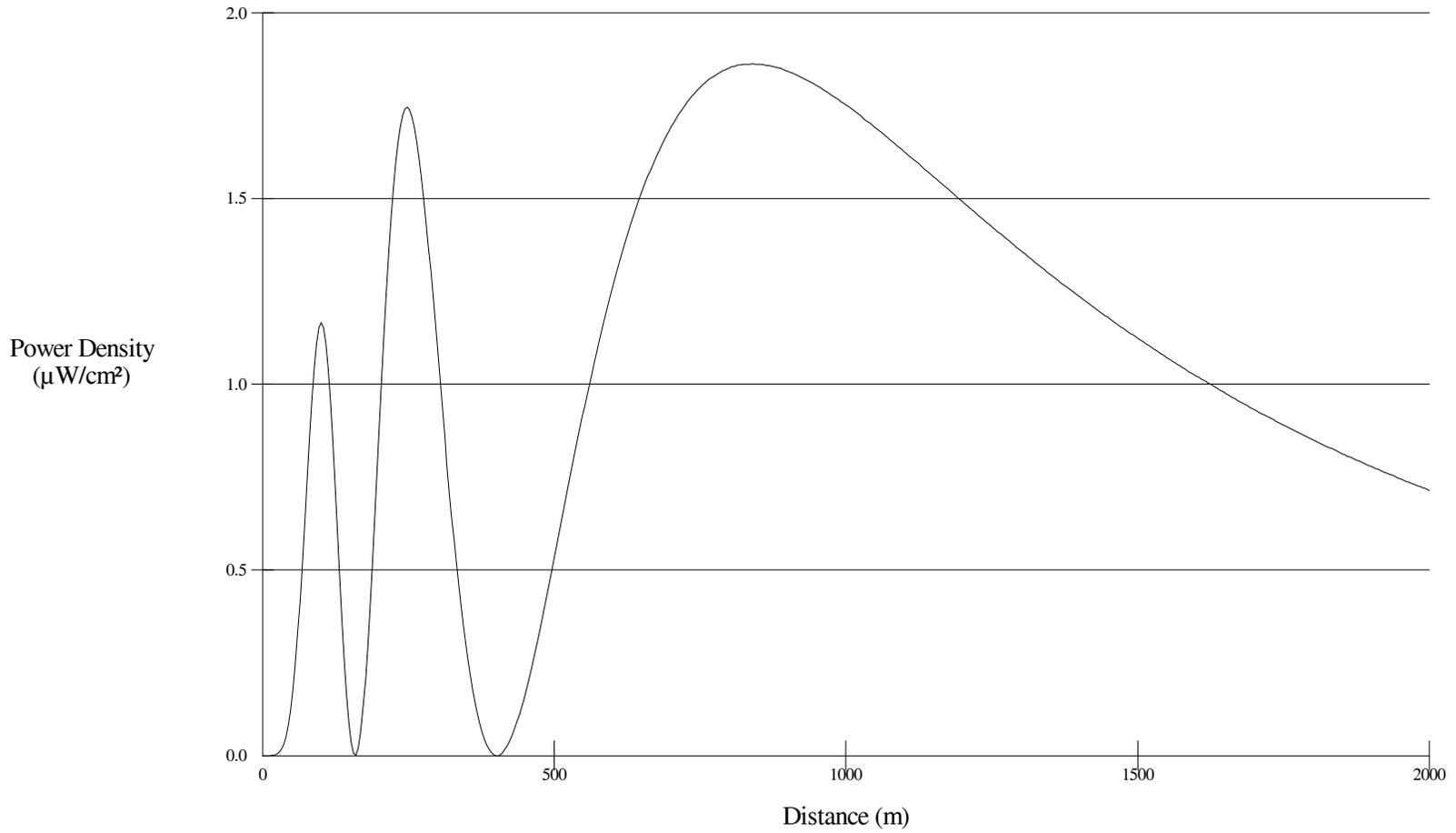
There also exist several other non-broadcast transmitters operating from the WRTQ/WXKW site including Part 22 radiotelephone and cellular radiotelephone, Part 24 personal communication services, and Part 90 land mobile radio. Unlike the two FM broadcast stations, these non-broadcast transmitters, all of which are categorically excluded from

routine evaluation, contribute a negligible amount to the total power density at or near ground level by virtue of their high antenna heights and low power levels.

Based on the analyses above, it is concluded that the proposed facility is in full compliance with non-ionizing radiation exposure limits and applicable safety standards and regulations.

The proposed antenna tower, which is the same tower which currently hosts the licensed facility, i.e. it is an existing structure. There will be no change in the height of the tower. The antenna site is not in a sensitive environmental area. The instant application has no other significant environmental impact. As such, the proposed facility does not require further analysis under 47 CFR §1.1307, and is therefore excluded from further processing per 47 CFR §1.1306.

Power Density vs Distance



Predicted WIXM Power Density at Ground Level