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WRBO Auxiliary Channel 278C1
Como, MS
NIER Analysis

Facilities Proposed
The proposed operation will be on Channel 278 (103.5 MHz) with an effective radiated power of 22.5 kilowatts. Operation is proposed with a 2-element circularly-polarized omni-directional full-wave-spaced antenna. The antenna will be side-mounted on a uniform cross-section guyed tower.

The FCC Antenna Structure Registration Number for the proposed tower is 1031121.

NIER Calculations
Study of the area within 1000 meters of the proposed site reveals no other likely sources of non-ionizing radiation except for the WRBO main facility which will not be operating simultaneously with the auxiliary. Thus, the ground level NIER values near the base of the proposed structure are believed to be negligible. Precise calculations are made only with regard to the levels from this proposal.

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(mW/cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.
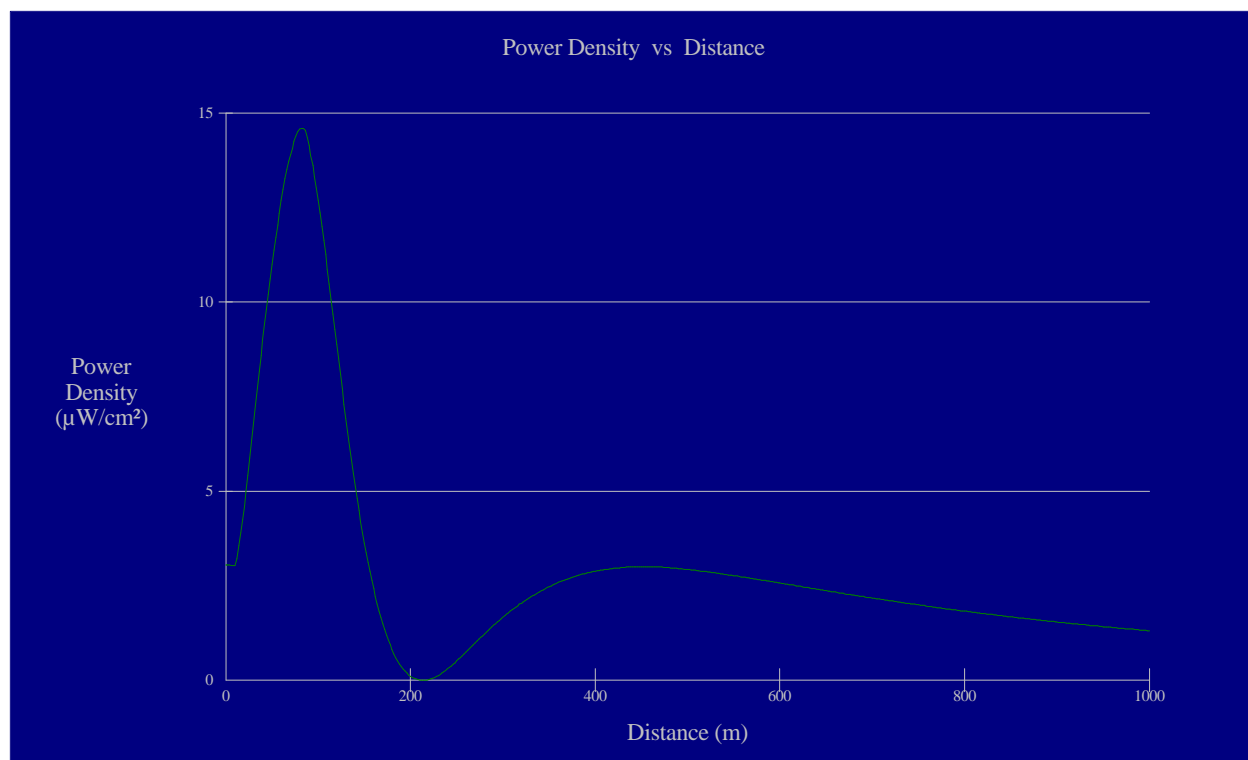
D is the distance in meters from the center of radiation to the calculation point.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 3 element pattern, which is the element pattern for the ERI Rototiller antenna proposed for use. The highest calculated ground level power density occurs at a distance of 82 meters from the base of the antenna support structure. At this point the power density is calculated to be 14.6 μW/cm^2 which is 1.46% of 1000 μW/cm^2 (the FCC standard for controlled environments) and 7.3% of 200 μW/cm^2 (the FCC standard for uncontrolled environments).

Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken.

The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.

Power Density vs Distance

Power Density (µW/cm²) vs Distance (m)

Ground-Level NIER   **OET FMModel**

WRBO Auxiliary
Antenna Type: ERI Rototiller
No. of Elements: 2
Element Spacing: 1.0 wavelength

Distance: 1000 meters
Horizontal ERP: 23 kW
Vertical ERP: 23 kW

Antenna Height: 125 meters AGL

Maximum Power Density is 14.6 µW/cm² at 82 meters from the antenna structure.