September 2007
New NCE FM
Cedarville, CA
NIER Analysis

Facilities Proposed

The proposed operation will be with an effective radiated power of 0.13 kilowatts. Operation is proposed with a 1-element circularly-polarized omni-directional antenna. The antenna will be side-mounted on a tower structure located at the corner of Main and Bonner in Cedarville.

Notice of the proposed tower construction has been filed with the Federal Aviation Administration on FAA Form 7460-1. Upon receipt of the FAA's determination of no hazard, FCC Antenna Structure Registration for the tower will be filed on Form 854, and the resulting Antenna Structure Registration Number will be promptly supplied to the Audio Division.

NIER Calculations

Study of the area within 1000 meters of the proposed site reveals no other likely sources of non-ionizing radiation. 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.

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

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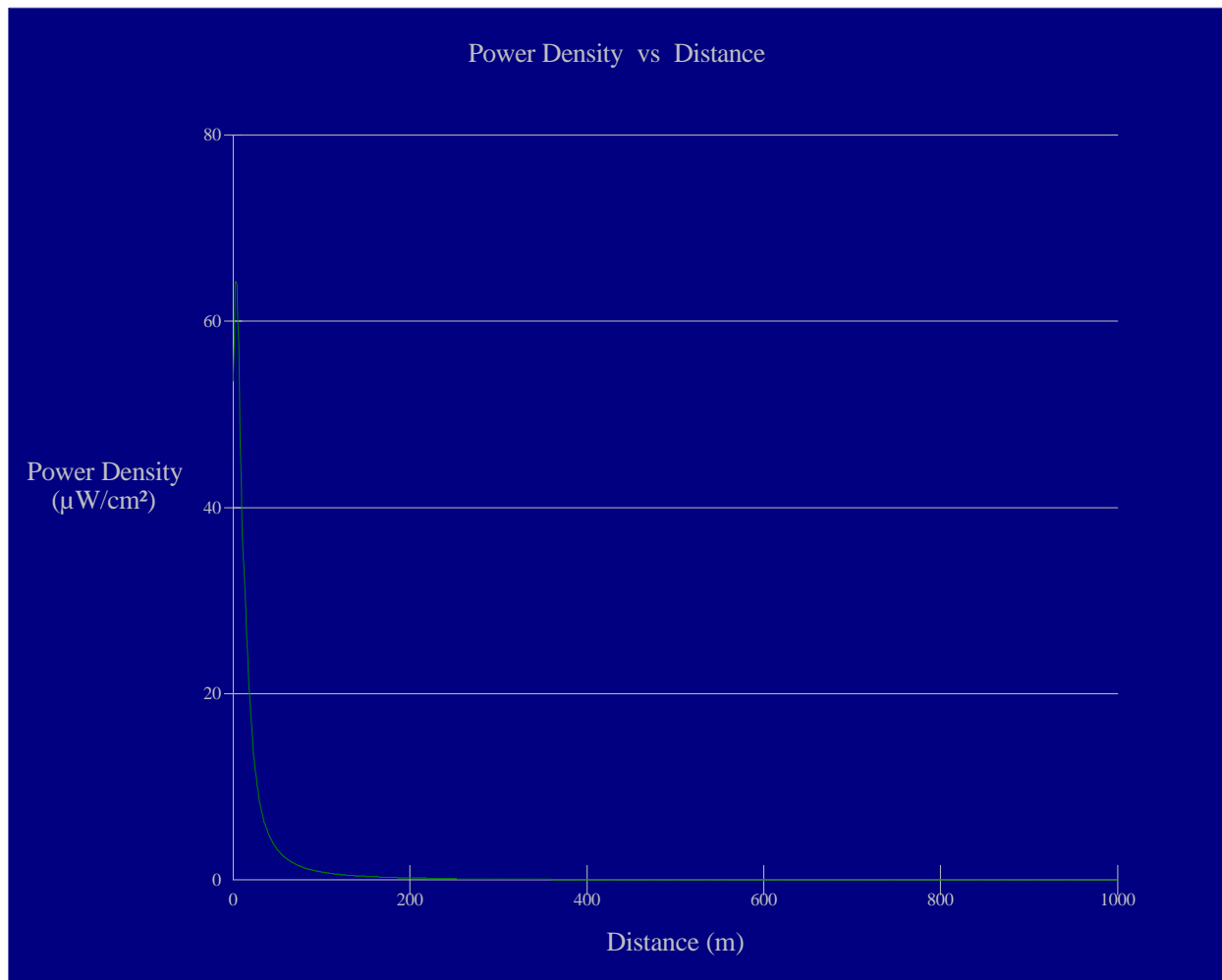
D is the distance in meters from the center of radiation to the calculation point.

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 1 element pattern, which is the element pattern for a "worst case" ring-stub antenna. The highest calculated ground level power density occurs at a distance of 3 meters from the base of the antenna support structure. At this point the power density is calculated to be 64.2 µW/cm², which is 32.1% of 200 µW/cm² (the FCC standard for uncontrolled environments).

The antenna tower is or will be posted with warning signs. 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.

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Power Density vs Distance

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

Ground-Level NIER   **OET FMModel**

Cedarville NCE FM
Antenna Type: "worst case" ring-stub assumed for this study
No. of Elements: 1
Element Spacing: dna

Distance: 1000 meters
Horizontal ERP: 0.13 kW
Vertical ERP: 0.13 kW

Antenna Height: 11 meters AGL

Maximum Power Density is 64.2 : W/cm^2 at 3 meters from the antenna structure.

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