October 2008
New FM Channel 205A
NIER Analysis

Facilities Proposed

The proposed operation will be on Channel 205A (88.9 MHz) with an effective radiated power of 2.5 kilowatts. Operation is proposed with a 2-element circularly-polarized directional antenna. The antenna will be side-mounted an existing tower on Butler Hill. The FCC Antenna Structure Registration number for this tower is #1003133

NIER Calculations

Study of the area within 1000 meters of the proposed site reveals no likely sources of non-ionizing radiation apart from this proposal and KMWS 209A Mount Vernon. Thus, precise calculations are made only with regard to the levels from this proposal and KMWS.

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 6 element pattern, which is the element pattern for the Shively antenna proposed for use. The highest calculated ground level power density occurs at a distance of 15 meters from the base of

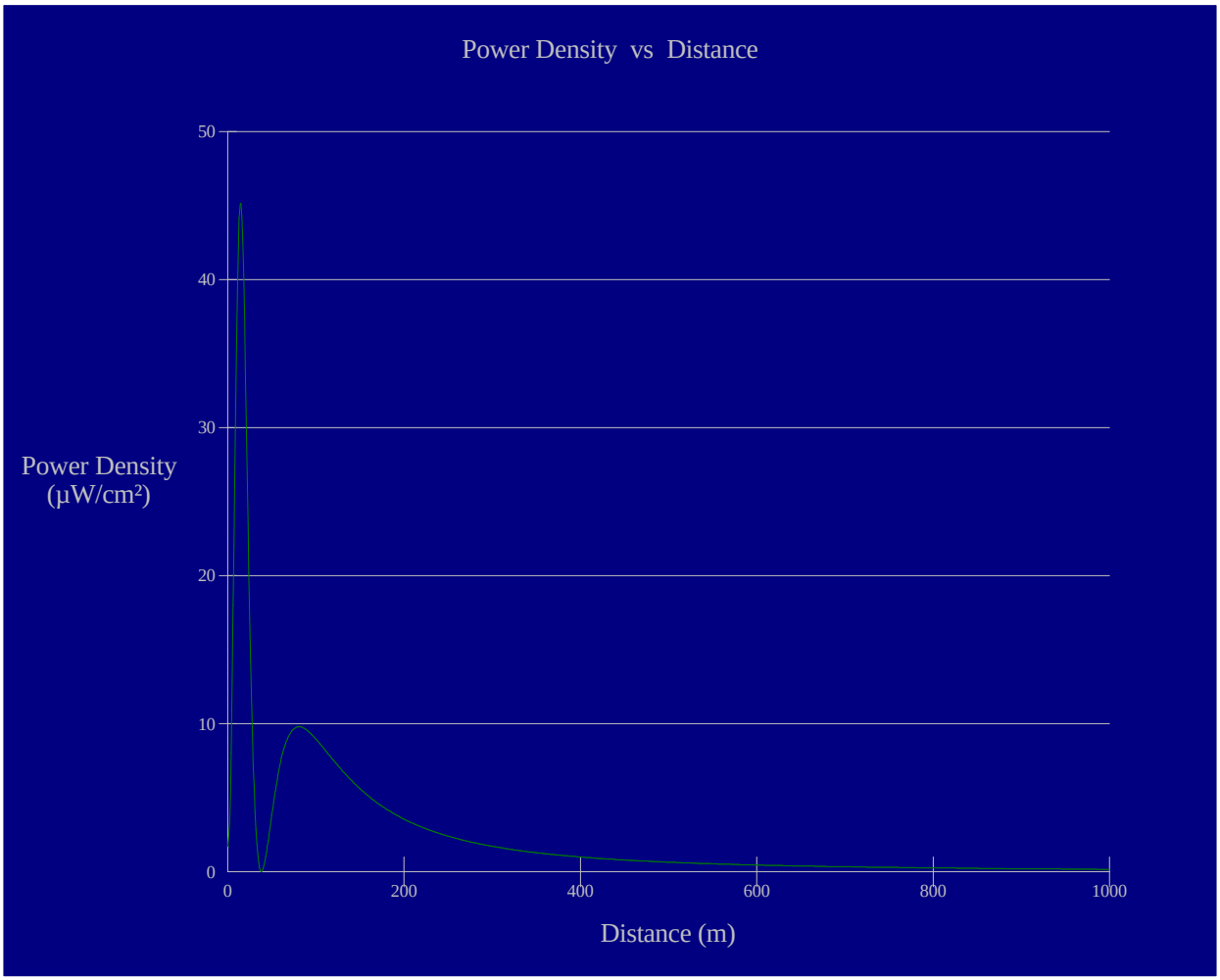
the antenna support structure. At this point the power density is calculated to be 45.1 μW/cm², which is 22.6% of 200 μW/cm² (the FCC standard for uncontrolled environments).

Calculations of the power density produced by the KMWS antenna system assume a Type 6 element pattern, which is the element pattern for the Shively antenna used by that station. The highest calculated ground level power density occurs at a distance of 29 meters from the base of the antenna support structure. At this point the power density is calculated to be 27.2 μW/cm², which is 13.6% of 200 μW/cm² (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of New 205A and the present operation of KMWS (were their maxima to coincide, which they do not) is 36.2% of 200 μW/cm² (the FCC standard for uncontrolled environments).

Public access to the site will be restricted. 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.

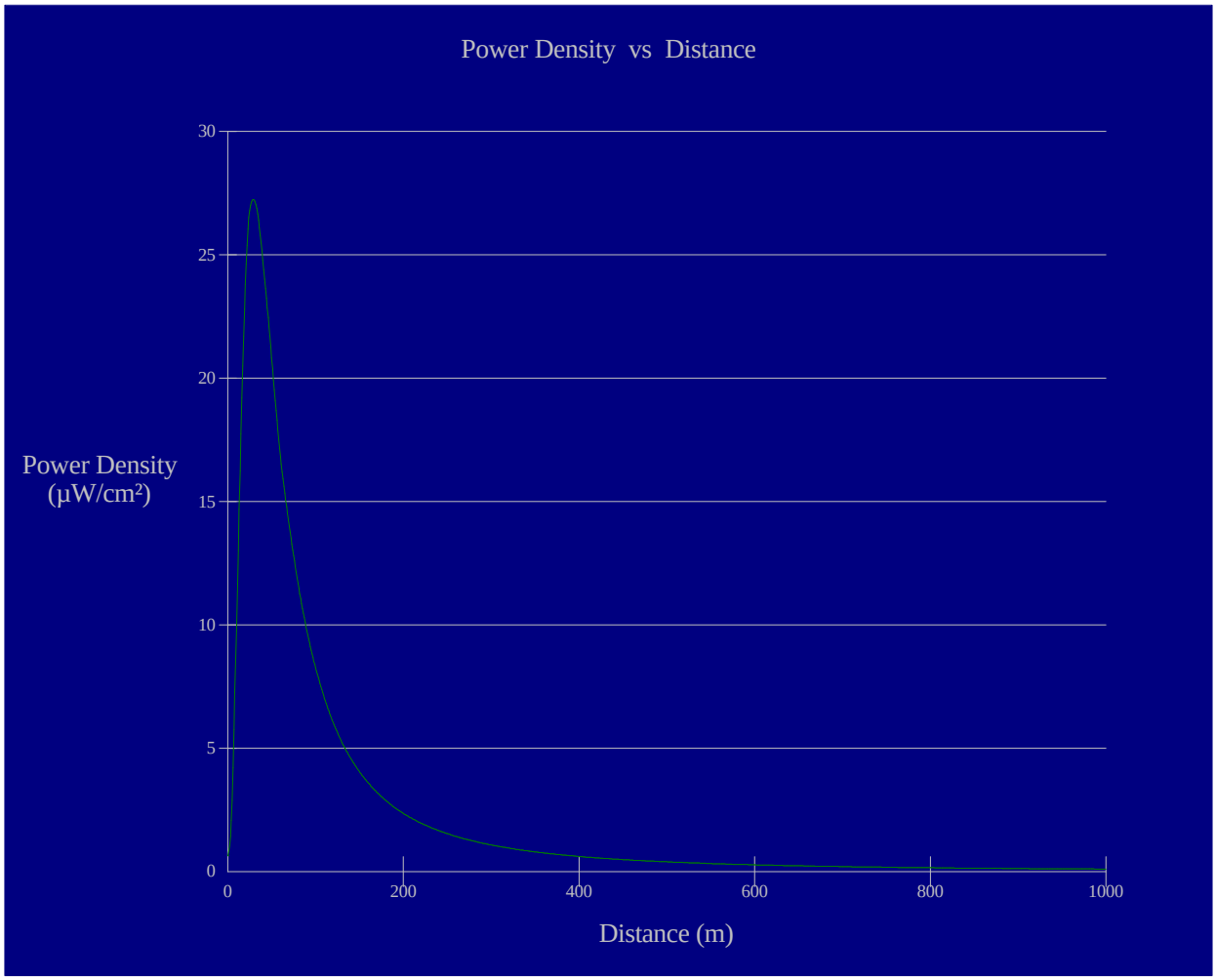


Ground-Level NIER **OET FMModel**

New 205A Sedro-Woolley

Antenna Type:	Shively 6810
No. of Elements:	2
Element Spacing:	1 wavelength
Distance:	1000 meters
Horizontal ERP:	2.5 kW
Vertical ERP:	2.5 kW
Antenna Height:	24 meters AGL

Maximum Power Density is 45.1 : W/cm^2 at 15 meters from the antenna structure.



Ground-Level NIER **OET FMModel**

KMWS 209A Mount Vernon

Antenna Type:	Shively 6810
No. of Elements:	1
Element Spacing:	dna
Distance:	1000 meters
Horizontal ERP:	1.5 kW
Vertical ERP:	1.5 kW
Antenna Height:	30 meters AGL

Maximum Power Density is 27.2 :W/cm^2 at 29 meters from the antenna structure.