Facilities Proposed

The proposed operation will be on Channel 286C2 (105.1 MHz) with an effective radiated power of 2.5 kilowatts. Operation is proposed with a 3-element circularly-polarized omni-directional half-wave-spaced antenna, to be mounted on an existing tower.

The proposed antenna support structure will not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

RF Exposure Calculations

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 21 meters from the base of the antenna support structure. At this point the power density is calculated to be 140.8 µW/cm²,

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which is 14.1% of 1000 μW/cm^2 (the FCC standard for controlled environments) and 70.4% of 200 μW/cm^2 (the FCC standard for uncontrolled environments).

The applicant will perform post-construction RF exposure measurements, if so required by the Commission.

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 exposure in excess of FCC guidelines.

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Power Density vs Distance

Power Density (μW/cm²)
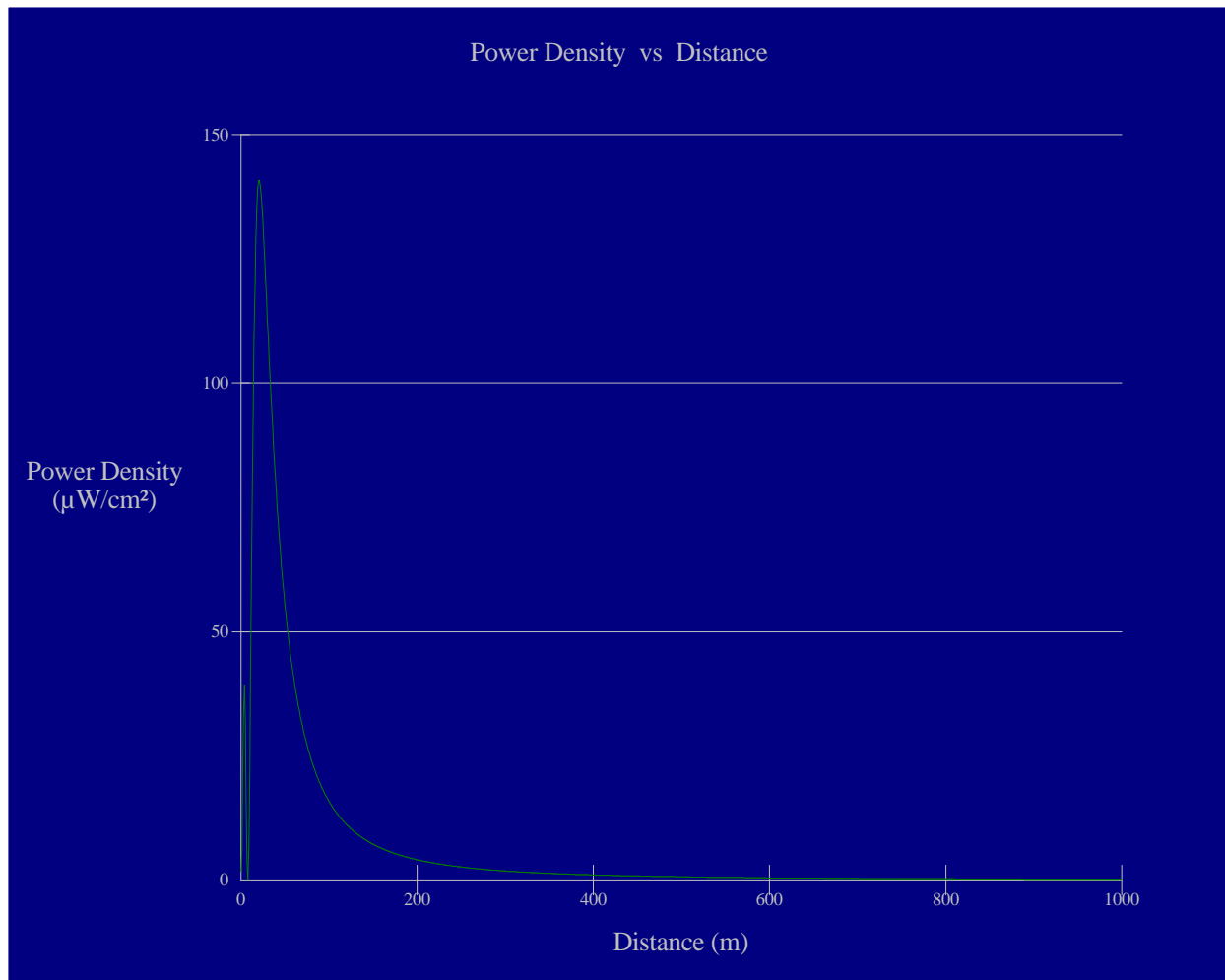
Distance (m)

Ground-Level RF Exposure   **OET FMModel**

KJXN 286C2 South Park

Antenna Type: Shively 6810 series
No. of Elements: 3
Element Spacing: 0.5 wavelength

Distance: 1000 meters
Horizontal ERP: 2.5 kW
Vertical ERP: 2.5 kW

Antenna Height: 9 meters AGL

Maximum Calculated Power Density is 140.8 : W/cm^2 at 21 meters from the antenna structure.

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