January 2014
KVYA(FM) Channel 218A
Cedarville, CA
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 218A with an effective radiated power of 0.280 kilowatts. Operation is proposed with a 2-element circularly-polarized omnidirectional antenna. The antenna will be mounted on an existing tower on Radio Hill.

The tower does 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.

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

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 KVYA 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 5 meters from the base of the antenna support structure. At this point the power density is calculated to be 16.0 μW/cm².

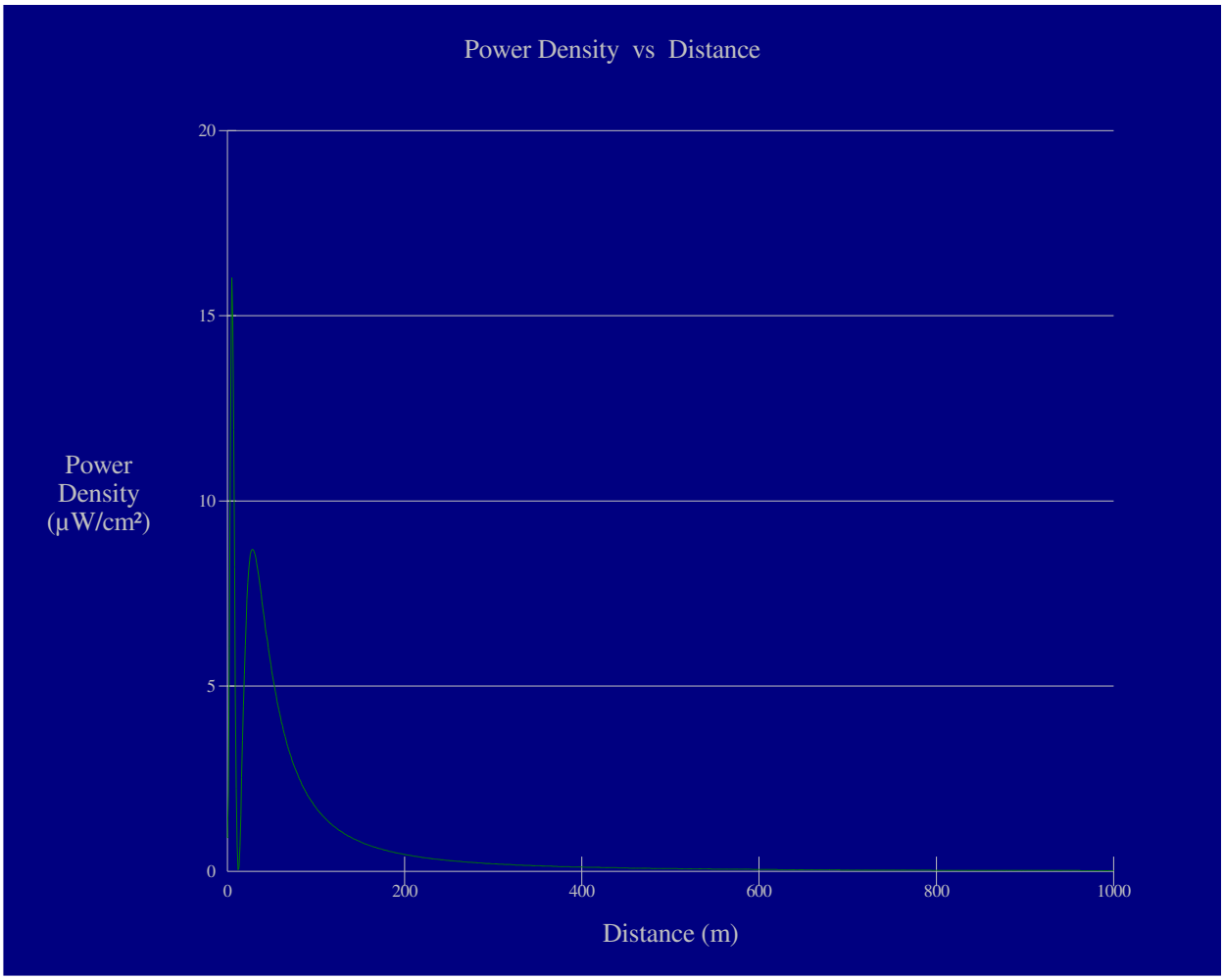
Calculations of the power density produced by KVYA and the other stations at this transmitter site are summarized in the following table:

Call	Avg or Peak ERP Antenna Model	Relative Field	Height AGL	Calculated Max Exposure	Gen Pop FCC Limit	% of Limit
KVYA(FM) 218A	0.280 kW avg SHI 6812B-2 0.85 wavelength	FMModel	11 m	16.0 μW/cm²	200 μW/cm²	8.0%
KDUP(FM) 201A	1.0 kW avg SHI 6812B-2 0.85 wavelength	FMModel	15 m	27.3 μW/cm²	200 μW/cm²	13.7%
K207CR	0.075 kW avg ring stub assumed	FMModel	17 m	13.4 μW/cm²	200 μW/cm²	6.7%
K13IU (analog)	0.089 kW peak antenna model unknown	0.500 assumed	5 m	41.3 μW/cm²	200 μW/cm²	20.7%
K22LE-D (digital)	0.104 kW avg SCA 4DR-4-2HW	0.257	15 m	1.4 μW/cm²	345 μW/cm²	0.4%
K24KX-D (digital)	0.100 kW avg SCA 4DR-4-2HW	0.257	15 m	1.3 μW/cm²	353 μW/cm²	0.4%

(For TV translators, the relative field value indicated is the maximum value which occurs at 45 degrees or more below the horizontal, based on the manufacturer's vertical plane pattern. The resulting adjusted ERP value is assumed to be radiated straight down to a point 2 meters above ground level at the base of the tower.)

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of KVYA and the present operations of the other stations at this site (were their maxima to coincide, which they do not) is 50% of the FCC standard for uncontrolled environments.

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.



Ground-Level RF Exposure **OET FMModel**

KVYA 218A Cedarville

Antenna Type:	Shively 6812B-2
No. of Elements:	2
Element Spacing:	0.85 wavelength
Distance:	1000 meters
Horizontal ERP:	0.280 kW
Vertical ERP:	0.280 kW
Antenna Height:	11 meters AGL

Maximum Calculated Power Density is 16.0 µW/cm^2 at 5 meters from the antenna structure.