KWAV Channel 245B
Monterey, California
Modification of License -- NIER Analysis
October 2004

Summary

Buckley Broadcasting of Monterey has replaced the existing KWAV antenna with an ERI SHPX-4AE antenna. The instant application has been filed to update the antenna model on the station license and to make a corresponding adjustment in TPO.

The antenna support structure 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.

NIER Calculations

Several other broadcast stations operate from the KWAV transmitter site, as listed in the attached table. (FM translator stations K208CW, K252CK, K267AW, and K291AE have been excluded as they each operate with an ERP of less than 100 Watts and are therefore categorically excluded from further study.)

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

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 KWAV antenna system assume a Type 3 element pattern, which is the element pattern for the ERI antenna installed for use by that station. 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 80.4 µW/cm².
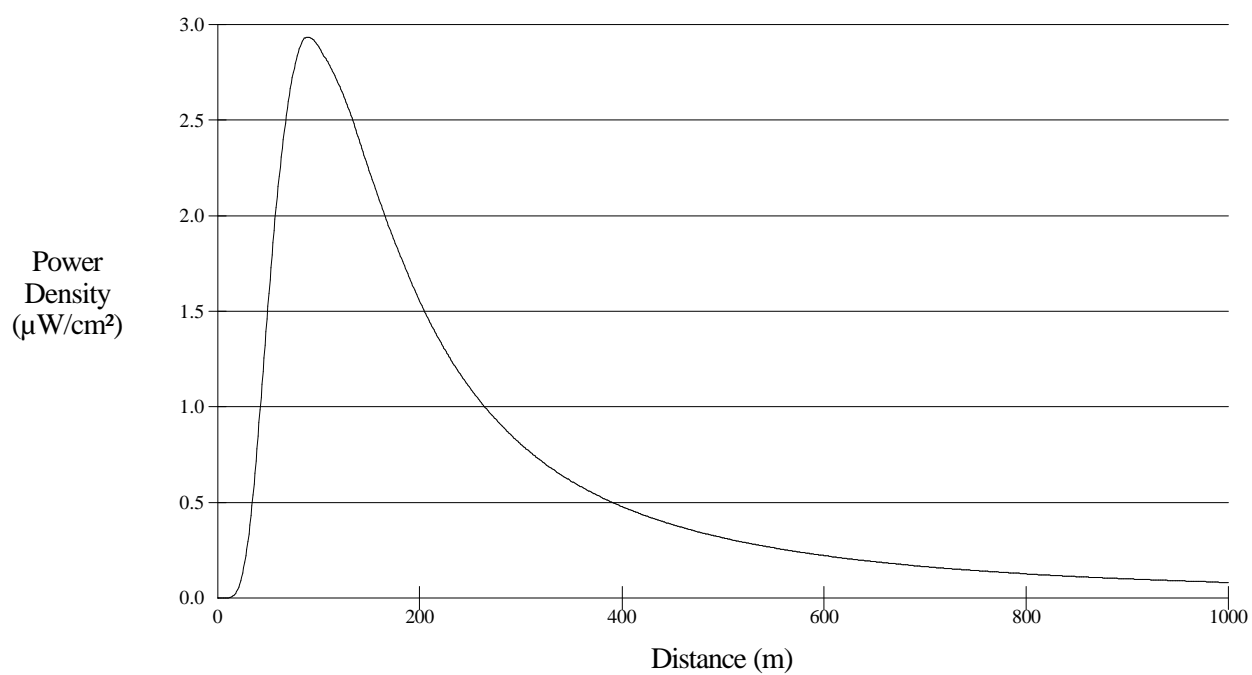
Calculations of the power density produced by the other broadcast stations at this site assume the appropriate element pattern for the installed FM antennas , or the appropriate manufacturer's vertical plane pattern (where available) for the installed TV antennas. The results are summarized in the attached table. These calculations show that the maximum calculated power density produced at two meters above ground level by the combined operations of the broadcast stations at this site (were their maxima to coincide, which they do not) is 79.7% of the FCC standard for uncontrolled environments.

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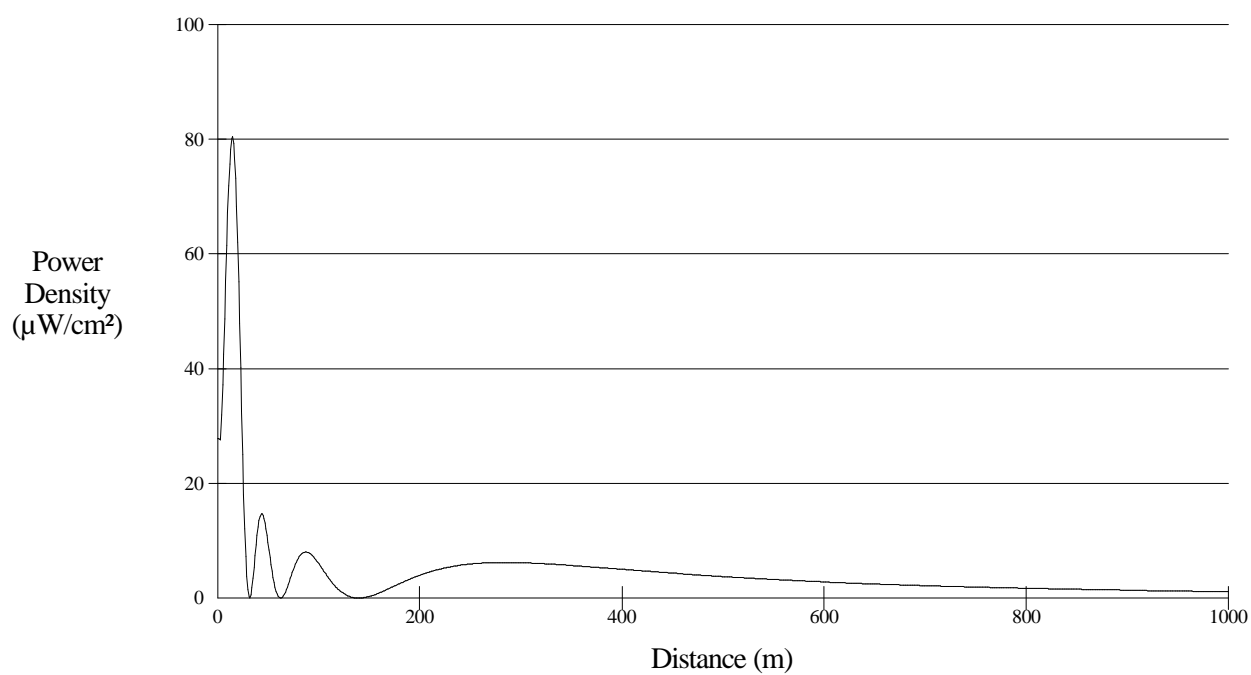
The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.

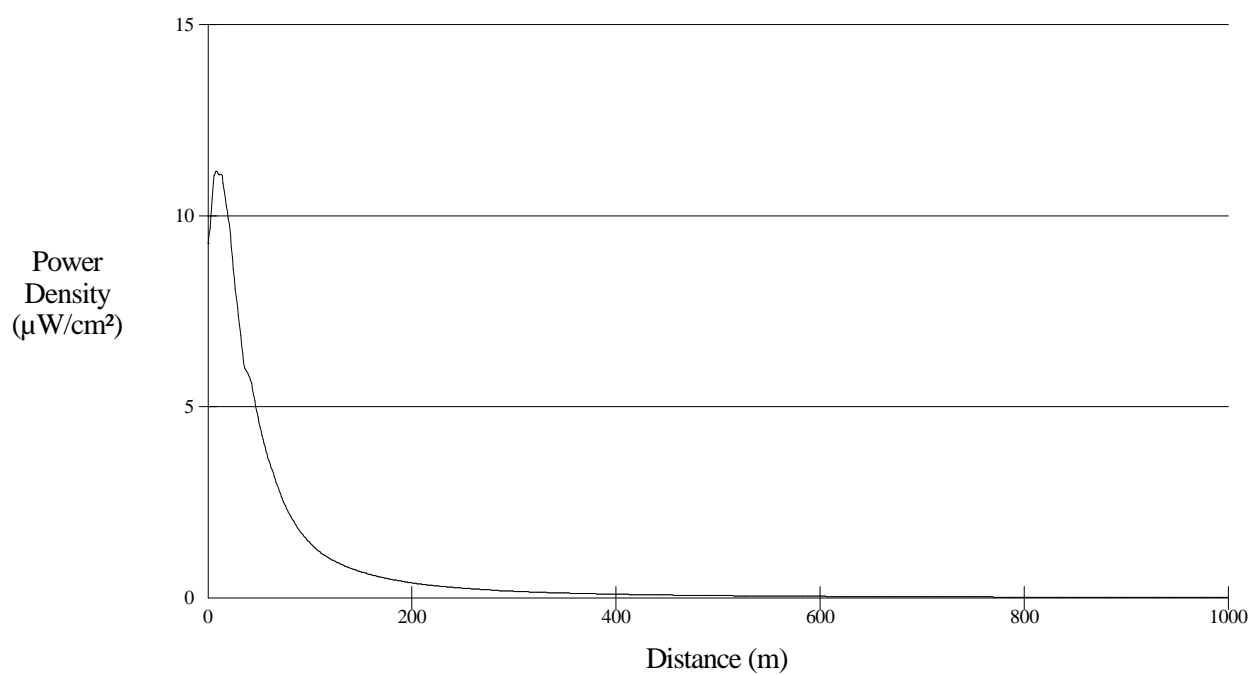| Station	Facilities	Max Exposure	Percent of Gen Pub Standard
KUSP 205B Santa Cruz	1.25 kW H 1.25 kW V 51 m AGL Shively 6813-2-SS	2.9 µW/cm² at 9 m	1.5% of 200 µW/cm²
KWAV 245B Monterey	18 kW H 18 kW V 38 m AGL ERI SHPX-4AE	80.4 µW/cm² at 15 m	40.2% of 200 µW/cm²
K260AA Carmel Valley	250 W H 250 W V 32 m AGL Scala 150EB/CP	11.2 µW/cm² at 8 m (1-bay ring-stub assumed)	5.6% of 200 µW/cm²
KPRC-FM 264B Salinas	1.4 kW H 1.4 kW V 17 m AGL ERI LPX-4AE-HW	10.4 µW/cm² at 58 m	5.2% of 200 µW/cm²
KHIP-FM1 282D Carmel Valley	870 W H 32 m AGL Scala CL-FM	9.0 µW/cm² at 17 m (1-bay ring-stub assumed)	4.5% of 200 µW/cm²
KMMD-CA Ch. 3 Salinas	88 W H 5 m AGL Scala 2CL-24	Using the manufacturer's pattern, KMMD-CA calculated a maximum exposure of 34.8 µW/cm² in their Feb 2004 application for this facility.	17.4% of 200 µW/cm²
K21EV Ch. 21 Salinas	16.1 kW H 40 m AGL ALP8L1-HST	Using the manufacturer's vertical pattern, we calculate a maximum exposure of 16.1 µW/cm² for 0.268 rel field (which occurs at 67 deg below horizontal)	0.9% of 1710.8 µW/cm²
KION-DT Ch. 32 Monterey	46 kW H 49 m AGL ALP12L6-HSM-32	Using the manufacturer's vertical pattern, we calculate a maximum exposure of 20.1 µW/cm² for 0.170 rel field (which occurs at 76 deg below horizontal)	1.0% of 1930.8 µW/cm²
KION-TV Ch. 46 Monterey	1350 kW H 61.5 m AGL TFU-30J-DAS	We calculate a maximum exposure of 75.2 µW/cm² for 0.1 rel field (which is a worst-case value higher than the manufacturer's pattern values below 45 degrees)	3.4% of 2210.8 µW/cm²
			Total = 79.7%

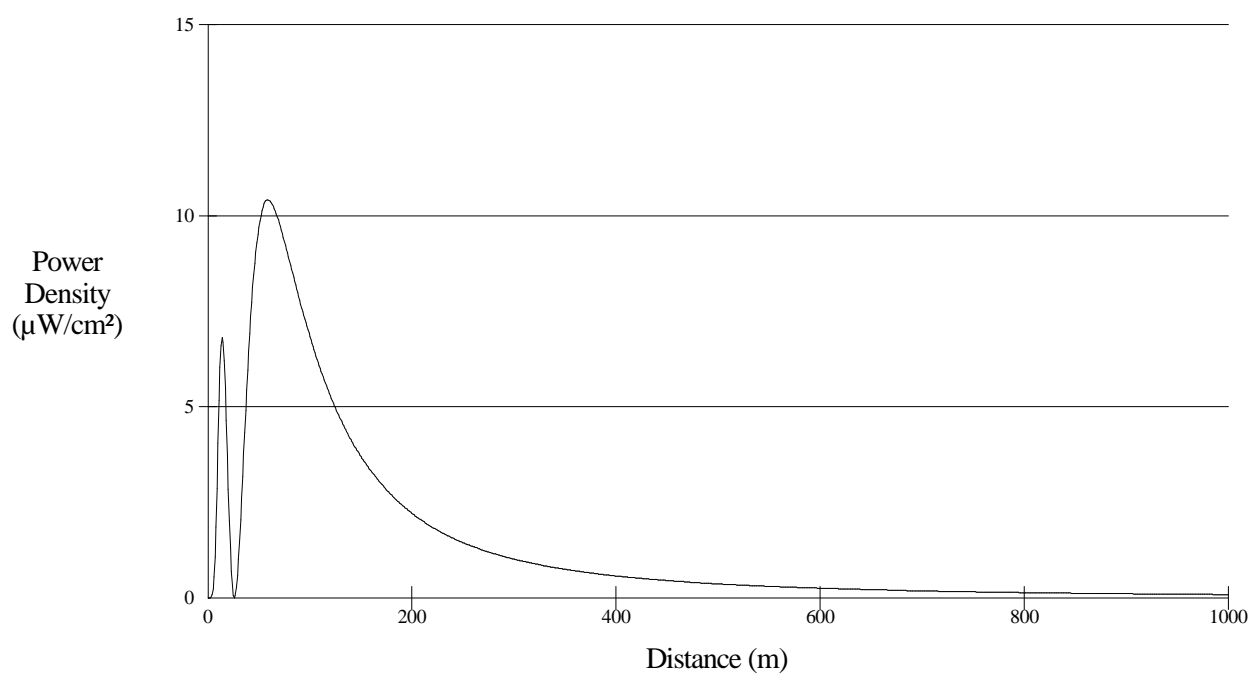# Power Density vs Distance

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