

**Exhibit B-17**  
**KCRE-FM Channel 232C3 Crescent City, California**  
**NIER Analysis**

**Facilities Proposed**

The proposed operation will be on Channel 232C3 (94.3 MHz) with an effective radiated power of 25 kilowatts. The antenna will be side-mounted on the existing KPOD-AM/FM tower located at 421 Highway 101 in Crescent City. The FCC Antenna Structure Registration Number for the tower is 1013617.

Other than KPOD-AM, there are no non-directional AM stations within 0.8 kilometers of the proposed operation. Pursuant to OET-65, the tower site is fenced to a distance of at least 1 meter from the AM radiator.

**NIER Calculations**

Study of the area around the proposed site reveals no likely sources of non-ionizing radiation other than KCRE-FM and KPOD-FM. (FM translator K216FE is located on a tower 830 meters from the proposed KCRE-FM operation, far enough that its 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 and KPOD-FM.

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 KPOD-FM antenna system assume a Type 2 element pattern, which is the element pattern for the Jampro JCP-3 antenna used by that station. The highest calculated ground level power density occurs at a distance of 41 meters from the base of the antenna support structure. At this point the power density is calculated to be 8.0 FW/cm<sup>2</sup>.

It has not yet been determined what type of antenna will be used for KCRE-FM, although the plan is for either a 3-bay or 4-bay Jampro “double V” antenna. Therefore, calculations of the power density produced by the KCRE-FM antenna system have been made assuming a 1-bay worst-case Type 1 “ring-stub” element pattern. The highest calculated ground level power density occurs at a distance of 22 meters from the base of the antenna support structure. At this point the power density is calculated to be 157.1 FW/cm<sup>2</sup>.

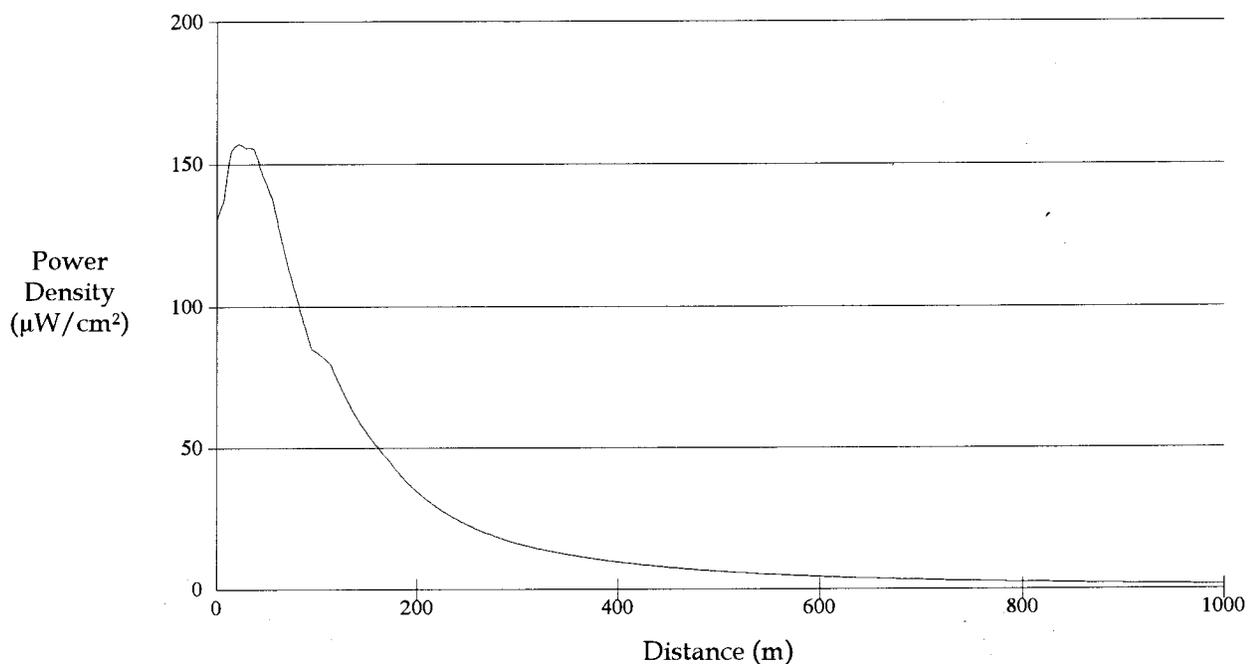
These calculations show that the maximum calculated power density produced at two meters above ground level by the “worst case” operation of KCRE-FM and the present operation of KPOD-FM (were their maxima to coincide, which they do not) is 165.1

FW/cm<sup>2</sup>, which is 16.5% of 1000 FW/cm<sup>2</sup> (the FCC standard for controlled environments) and 82.6% of 200 FW/cm<sup>2</sup> (the FCC standard for uncontrolled environments). Since study of KCRE-FM was conducted using a worst-case 1-bay ring-stub antenna, the actual ground level power densities from any antenna likely to be used by KCRE-FM will be lower. Therefore, it is not necessary to condition the KCRE-FM construction permit on the use of any particular make or model of antenna.

Public access to the site is restricted by a locked gate and the antenna tower is 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.

Power Density vs Distance



Ground-Level NIER Analysis

OET FMModel

**KCRE-FM Crescent City**

Antenna Type: "worst case" ring-stub assumed for this study

Number of Elements: 1

Element Spacing: dna

Distance: 1000 meters

Horizontal ERP: 25 kW

Vertical ERP: 25 kW

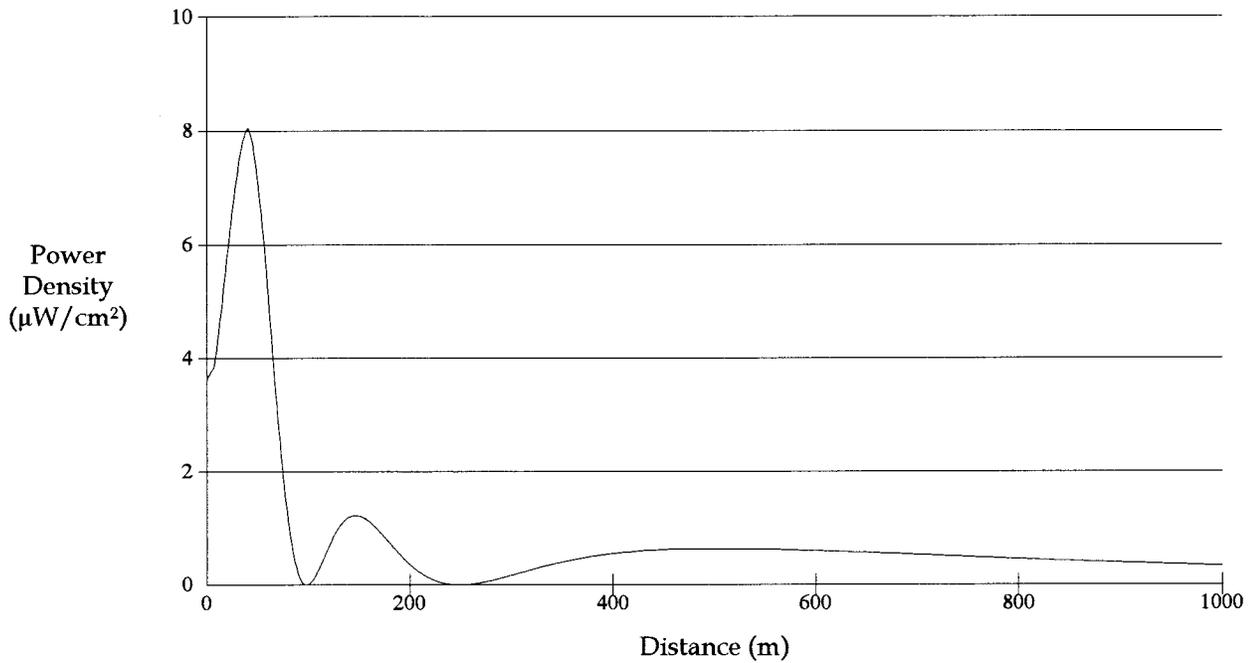
Antenna Height: 82 meters AGL

Maximum Power Density is  $157.1 \mu\text{W}/\text{cm}^2$  at 22 meters from the antenna structure.

*Actual antenna to be used will produce lower results.*

Hatfield & Dawson Consulting Engineers

Power Density vs Distance



Ground-Level NIER Analysis

OET FMModel

**KPOD(FM) Crescent City, CA**

Antenna Type: Jampro JCP-3

Number of Elements: 3

Element Spacing: 1 wavelength

Distance: 1000 meters

Horizontal ERP: 6 kW

Vertical ERP: 6 kW

Antenna Height: 90 meters AGL

Maximum Power Density is  $8.0 \mu\text{W}/\text{cm}^2$  at 41 meters from the antenna structure.

Hatfield & Dawson Consulting Engineers