

**LIEBERMAN & WALISKO**  
*CONSULTING TELECOMMUNICATIONS ENGINEERS*  
**701 YEATMAN PARKWAY**  
**SILVER SPRING, MD 20902**

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Burt Broadcasting - Alamogordo, NM

Exhibit II, Figure 1

Two antennas will be mounted on a common tower. KZZX at 19.05 meters AGL and an ERP of 1.37 kW from a 1 bay type 3 non directional radiator and KYEE at 33.22 meters AGL and an ERP of 38.5 kW from a 6 bay type 3 directional radiator.

The following equation was extracted from OST Bulletin #65 and was used to determine radiation levels at ground level and at 2 meters above the ground for the specified antenna configurations:

$$S = \frac{(2.56)(1.64)(F^2)(ERP \text{ watts})(1000 \text{ mW} / \text{watt})}{4\pi(R^2)}$$

where:  $S$  = power density ( $\text{mW}/\text{cm}^2$ )

$F$  = relative field factor in downward direction

$R$  = distance to the center of radiation ( $\text{cm}$ )

The maximum allowable radio frequency radiation at frequencies between 30 and 300 MHz is  $1.0 \text{ mW}/\text{cm}^2$  according to the radio frequency protection guidelines contained in the ANSI C95.1-1982 standard (American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz).

The following variation of the above equation was used to determine the distance from the center of radiation of specified antenna configurations to the maximum allowable radiation level of  $1.0 \text{ mW}/\text{cm}^2$ :

$$R = \sqrt{\frac{(2.56)(1.64)(ERP \text{ watts})(F^2)(1000 \text{ mW} / \text{watt})}{4\pi(S)}}$$

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Exhibit II, Figure 1 (Cont'd)

For KZZX at ground level

$$S_{Ground} = \frac{(0.64)(1.64)(1.0^2)(1370+1370)(1000 \text{ mW/watt})}{\pi (1,905 \text{ cm})^2}$$

$$S_{Ground} = 0.2523 \text{ mW/cm}^2$$

For KYEE at ground level

$$S_{Ground} = \frac{(0.64)(1.64)(0.25^2)(38,500+38,500)(1000 \text{ mW/watt})}{\pi (2,560 \text{ cm})^2}$$

$$S_{Ground} = 0.2453 \text{ mW/cm}^2$$

The combined radiation values at ground level are: 0.4976 mW/cm<sup>2</sup>  
Maximum allowable radiation is 1 mW/cm<sup>2</sup>.

The height on the tower (H) above which the ANSI maximum allowable radiation level of 1 mW/cm<sup>2</sup> would be exceeded was calculated using a computer program to approximate yields until the combined radiation values equal 1.0 mW/cm<sup>2</sup>. The program found that at 6 meters AGL, the combined radiation from the two antennas equaled 1.02 mW/cm<sup>2</sup>. Therefore, in the event the tower needs to be climbed, power to the array will be reduced or curtailed as necessary when the climber reaches 6 meters above the ground. A fence precludes the general public from access to the area.

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