

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

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WFPT-DT - Frederick, Maryland

Exhibit 36 Figure 1

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

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

where:

$S$  = power density (mW/cm<sup>2</sup>)

$F$  = relative field factor in downward direction

$D$  = distance to the bottom of radiation (cm)

The maximum allowable radio frequency radiation at UHF frequencies between 300 and 1500 MHz is f/300 mw/cm<sup>2</sup> 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 allowable radiation for television channel 62 is 2.54 mw/cm<sup>2</sup> and for television channel 28, 1.86 mw/cm<sup>2</sup>

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 2.54 mW/cm<sup>2</sup> for channel 62 and 1.86 mw/cm<sup>2</sup> for channel 28:

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

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Exhibit 36 Figure 1 (Cont'd)

For ground level - television channel 62

$$S_{Ground} = \frac{(0.64)(1.64)(0.28^2)[0.4(1,480,000+148,000)](1000mW/watt)}{\pi(14,410cm)^2}$$

$$S_{Ground} = 0.082144 \text{ mW/cm}^2$$

For ground level - television channel 28

$$S_{Ground} = \frac{(0.64)(1.64)(0.158^2)(14,000)(1000mW/watt)}{\pi(14,410cm)^2}$$

$$S_{Ground} = 0.000507 \text{ mW/cm}^2$$

Since the value for channel 62 is the higher level of radiation to be encountered, calculations to determine the height on the tower above which the ANSI maximum allowable radiation level of 2.54 mW/cm<sup>2</sup> would be exceeded.

$$R = \sqrt{\frac{(0.64)(1.64)(0.28^2)[0.4(1,480,000+148,000)](1000mW/watt)}{\pi(2.54mW/cm^2)}}$$

$$R = 2,591.405cm = 25.91m$$

The distance from the lowest element of the antenna to the point of maximum radiation on the tower would be 26 meters. Therefore, when a tower climber would

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Exhibit 36 Figure 1 (Cont'd)

reach a point that is 26 meters below the instant antenna, power to the antenna will be curtailed.

The tower site will be fenced and access to the enclosed fence area will be limited to those people who have valid business at the site.

The radiation levels of both television channels operating as a combined component will not exceed the maximum allowable levels of radio frequency radiation at ground level or anywhere in the immediate vicinity of the proposed tower.