

Formula (7) from Section II of OET 65:

$$S = (2.56) (EIRP) / (4) (PI) (R)^2$$

where:

S = Highest power density (mw/cm²) at ground level

R = Distance from center antenna to ground in cm,

EIRP = 1.64 times ERP relative to dipole in mw,

Power is calculated at worst case conditions

MAX S = 1.0 mw/cm² for FM station between 88 and 108 mHz

ERP = (horizontal and vertical added times field factor².)

Station: KBEXQ with antenna up 109 meters and ERP 17.5 kw

$$S = \frac{(2.56) (1.64) (1000) (35,000) (1.000)^2}{(4) (3.14) (10,900)^2}$$

S = 0.098 mw/cm², 9.8 % of Controlled Exposure allowed.

S = 0.098 mw/cm², 49.2 % of Uncontrolled Exposure allowed.

Distances from FM Table 5, OET 65-A for minimum clearance

Power 35.0 kw Worst Case height AGL is 33.6 meters

Bays 2 Best Case height AGL is 16.8 meters

Proposed height AGL is 109.0 meters Clearance +75.4 m