

W44CL-D, Roanoke, Virginia
Facility ID# 49408
30 August, 2017

Environmental Statement

Access to this privately owned tower site is by a single road gate which is tightly monitored by the site owner. The area around the tower is roped off with warning signs due to WPAR-FM which does cause RF fields above the OET-65 limits. RF caution signs are also posted at other points nearby. The proposed construction is on an existing registered broadcast tower requiring no new ground construction.

The proposed antenna is designed to have very low RF radiation at low angles to protect building top or other low elevation mounting situations. According to data supplied by the proposed antenna manufacturer the antenna field factor in a downward direction within 30 degrees of vertical does not exceed 0.018. Height to the center of the antenna is 18 meters, and assuming a 2 meter height of interest above ground the height to be calculated will be 16 meters. The intended channel 32 (581 MHz) carries a maximum public exposure MPE of $581/1500 = .387 \text{ mW/cm}$ or $387 \mu\text{W/cm}^2$. This application specifies elliptical polarization with 15 kW ERP in the horizontal plane, plus 33 percent or 5 kW in the vertical plane, for a total summed ERP of 20 kW.

Using the general exposure formula $S = (.256)(1.64)(100)(F^2) (ERP)/4\pi R^2$ this translates to:

$S = (.256)(1.64)(100)(0.018^2) (20000)/4\pi(16^2) = .085 \mu\text{W/cm}^2$, far below the maximum of $387 \mu\text{W/cm}^2$ for uncontrolled exposure on channel 32. Even though this location would readily be considered an Occupational/Controlled Exposure location, RF radiation values to a person standing on the ground are far below even the public/uncontrolled limits. It is likely the RF levels at ground or head height will actually be lower than the presently licensed operation.

The only other station on the same tower is WPAR-FM which acknowledges possible RF levels in excess of the controlled exposure limit and has markings and signage to that effect.

On the basis of these calculations it is asserted that the proposed application does not present any significant environmental effect as defined in the FCC Rules and Regulations.