

RF COMPLIANCE EXHIBIT

October 13, 2017

The proposed WELU D facility will comply with the FCC Rules concerning human exposure to radio frequency (RF) energy. The calculation of RF energy at 2-m above ground was made under the procedures of OET Bulletin No. 65. The formula employed is as follows:

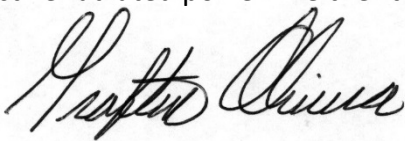
$$S = \frac{(33.4)F^2P}{R^2}$$

where, S = power density in $\mu\text{W}/\text{cm}^2$, F = relative field factor at the angle to the calculation point, P = the total effective radiated power relative to a dipole in watts, and R = distance from the antenna radiation center to the calculation point in meters.

The proposed antenna will be mounted with radiation center at a height of 36 meters on the existing tower structure. The power density at 2 meters above ground level at the base of the tower, based on a "worst-case" vertical relative field value of 0.1 for any depression angle below the horizon, a total ERP of 10 kW (H) and an antenna center of radiation height above ground level of 6 meters, the calculated power density at two meters above ground level at the base of the tower is 209 microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$), or 61.5 % of the Commission's recommended limit applicable to uncontrolled exposure areas, 339.3 $\mu\text{W}/\text{cm}^2$, for channel 20. Since the total RF exposure will not exceed the FCC limits for uncontrolled environments, the proposal complies with the FCC limits for human exposure to RF radiation.

The applicant will verify that access to the tower site is restricted and the site will be appropriately marked with RFR warning signs. In addition, since this is a multi-user site, procedures will be in effect to coordinate with other users in the event that workers or other authorized personnel need to enter the restricted area or climb the tower, to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such procedures include reducing the average exposure by spreading out the work over a longer period of time, wearing RFR exposure monitors or scheduling work when the stations are shut down.

The antenna system is designed so that the effective radiated power at any angle above the horizontal shall be as low as possible, and in the same vertical plane does not exceed the effective radiated power in either the horizontal direction or below the horizontal.



Grafton Olivera, P.E.